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THE RESPONSIVE LISTENING SKILLS OF ADOLESCENTS:  
A STUDY OF CONVERSATIONAL BACKCHANNEL  
BEHAVIORS

by  
Joseph A. Pikor

A Dissertation Submitted to the Faculty of the Graduate  
School of Loyola University of Chicago in Partial  
Fulfillment of the Requirement for the Degree of  
Doctor of Philosophy

May

1993

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## VITA

The author, Joseph A. Pikor, is the son of Lois and Adolph Pikor. He was born July 18, 1956. His elementary and high school education was obtained in the parochial school system of the Archdiocese of Chicago, Illinois.

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## TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS . . . . .	ii
VITA . . . . .	iv
LIST OF TABLES . . . . .	viii
LIST OF FIGURES . . . . .	ix
CONTENTS OF APPENDICES . . . . .	x
 Chapter	
I. INTRODUCTION . . . . .	1
II. LITERATURE REVIEW . . . . .	11
Definitions and Terms . . . . .	12
Assumptions . . . . .	13
Some Important Functions of Backchannels for Adults . . . . .	15
Infant Research . . . . .	16
Preschool Research . . . . .	20
Important Factors for Social Attraction in Children . . . . .	22
Importance of Peer Relationships . . . . .	23
Importance of Teacher Relationships . . . . .	24
Importance of Communication Skills . . . . .	25
Importance of Academic Achievement . . . . .	26
Research Linking Backchannels with Personality Variables . . . . .	27
Adolescents . . . . .	30
Summary and Goals . . . . .	32
III. METHOD . . . . .	35
Research Questions and Predictions . . . . .	35
Instruments . . . . .	36
Game . . . . .	37
Self-Esteem Inventory . . . . .	38
Social Attractiveness Measure . . . . .	39
Procedures . . . . .	40
Subject Selection . . . . .	40

Preparation for Testing . . . . .	41
Testing Room . . . . .	41
Examiner Training . . . . .	42
Trial Run . . . . .	43
Subject Familiarity . . . . .	43
Data Collection . . . . .	44
Testing for Responsiveness . . . . .	44
Testing for Self-Esteem . . . . .	45
Testing for Social Attractiveness . . . . .	45
Recording Achievement . . . . .	46
Data Preparation and Analysis . . . . .	46
Behavioral Measures . . . . .	47
Independent Observations . . . . .	47
Measures of Inter-Rater Agreement . . . . .	49
Statistical Analysis . . . . .	49
Age, Gender, and Responsive Listening . . . . .	50
Social Attractiveness and Responsive Listening . . . . .	51
Academic Achievement and Responsive Listening . . . . .	52
Self-Esteem and Responsive Listening . . . . .	53
Summary . . . . .	54
IV. RESULTS . . . . .	59
Research Questions and Predictions . . . . .	59
Dependent Variables . . . . .	60
Agreement Between Coders . . . . .	62
Age, Gender, and Responsive Listening . . . . .	64
Age, Gender, and Gaze . . . . .	65
Age, Gender, and Smile . . . . .	70
Age, Gender, and Total . . . . .	74
Gender Differences . . . . .	78
Age Differences . . . . .	80
Summary . . . . .	82
Social Attractiveness and Responsive Listening . . . . .	83
Social Attraction and Gaze . . . . .	85
Social Attraction and Smile . . . . .	87
Social Attraction and Total . . . . .	90
Summary . . . . .	92
Academic Achievement and Responsive Listening . . . . .	93
Correlation Coefficients . . . . .	93
Scholastic Abilities and Responsive Listening . . . . .	95



Reading and Responsive Listening . . . .	95
Math and Responsive Listening . . . .	96
Language and Responsive Listening . . .	97
Summary . . . . .	97
Self-Esteem and Responsive Listening . . . .	98
Chapter Summary . . . . .	100
V. DISCUSSION . . . . .	102
Technical Strengths . . . . .	102
Developmental Perspective . . . . .	105
Gender Differences . . . . .	111
Age Differences . . . . .	114
Discussion of Discrete Responses . . . . .	116
Academic Achievement . . . . .	118
Social Attraction, Self-Esteem, and Responsive Listening . . . . .	120
Chapter Summary and Future Directions . . . .	123
REFERENCES . . . . .	127
APPENDICES . . . . .	133

## LIST OF TABLES

Table	Page
1. Correlation Between Coder and Experimenter . . . . .	63
2. Analysis of Variance, Gaze by Gender and Age . . . . .	67
3. Analysis of Variance, Smile by Gender and Age . . . . .	71
4. Analysis of Variance, Total by Gender and Age . . . . .	75
5. Responsive Listening and Gender t-tests . . . . .	79
6. Responsive Listening and Age t-tests . . . . .	81
7. Analysis of Variance, Gaze by Social Attraction and Gender . . . . .	86
8. Analysis of Variance, Smile by Social Attraction and Gender . . . . .	89
9. Analysis of Variance, Total by Social Attraction and Gender . . . . .	91
10. Correlation Between Achievement and Dependent Measures . . . . .	94

## LIST OF FIGURES

Figure	Page
1. Gaze in Relation to Age and Gender . . . . .	69
2. Smile in Relation to Age and Gender . . . . .	73
3. Total in Relation to Age and Gender . . . . .	77

## CONTENTS FOR APPENDICES

APPENDIX	Page
A. Script . . . . .	134
B. Coopersmith Self-Esteem Inventory . . . . .	138
C. Social Attractiveness Rating Scale . . . . .	140
D. Parents' Letter . . . . .	142
E. Parental Permission . . . . .	145
F. Data Collection Sheet . . . . .	147
G. Listening by Scholastic Achievement, Analysis of Variance . . . . .	149
H. Listening by Reading, Analysis of Variance . . . . .	151
I. Listening by Math, Analysis of Variance . . . . .	153
J. Listening by Language, Analysis of Variance . . . . .	155
K. Listening by Self-Esteem, Analysis of Variance . . . . .	157
L. Table of Means . . . . .	159

## CHAPTER I

### INTRODUCTION

Parents and teachers alike know that with increasing age and maturity children are learning to become more effective communicators. Parents seem to place great emphasis on a child's first spoken word and, appropriately, educators tend to note this event as a "developmental milestone". However, the appearance of a child's first spoken word is such a dramatic event that it tends to obscure equally important development within other communication channels which are occurring simultaneously. It is within this other domain of development that this research centers; specifically, the development of responsive listening behaviors. Clearly children need to learn to speak, but equally important, they need to learn to listen.

This research is an investigation into the development of responsive skills by studying the backchannel skills of adolescents. Recent research (Miller, Lechner and Ruggs, 1985; Lechner, 1986; Lechner, 1991) with preschoolers and early elementary school age children has begun to create a picture of how these behaviors change over developmental time, in form, use, and function. The present research

presents questions which may begin to close the gaps in the knowledge base and complete the developmental pattern of responsive listening skills.

Responsive listening skills are social behaviors which facilitate conversation by acknowledging that one is listening, attentive, interested in, and understanding of the concern of another. The literature indicates that several terms have been used to describe responsive listening behaviors (Kendon, 1967). The most commonly used term, "backchannel behaviors," was first coined by Yngve (1970). This definition included such verbalizations as "I see," "okay," "uh-huh," and "oh." Non-verbal signals, such as head nods, smiles, frowns and facial expressions were also included.

The term backchannel implies that there are two channels in conversation which are operating simultaneously. The "main" or "front" channel is seen as the spoken word. The "back" channel is the medium over which the listener gives useful information to the speaker without actually claiming the floor.

The knowledge base in responsive listening skills actually began in research done with adult populations. Many of the functions, uses and individual differences were first established with adults. Studies have shown that backchannel behaviors play an important function in the social interactions of adults. For example, adult's use of

backchannel cues has been linked with social attraction and liking (Rosenfeld, 1966), interpersonal attraction (Davis and Perkowitz, 1979) and popularity (Miller, Berg and Archer, 1983).

A review of the literature indicates that researchers have found many responsive behaviors, such as smile and eye-gaze, present since infancy (Wolff, 1963; Sroufe and Waters, 1976). However, their function and purpose are yet to be established. Infants use these responsive behaviors in a manner which appears somewhat reflexively without purposeful intent. These behaviors gain attention for the infant and serve to maintain general social interaction. For instance, smiling and gazing are used in developing attachment behaviors between mother and child (Argyle and Cook, 1976); infant eye-gaze induces many communication behaviors in mothers, such as smiling, talking or singing (Als, 1977; Hutt and Ounsted, 1966).

Much can be learned regarding the importance of eye-contact, or gazing, as a responsive behavior. In their absence, as noted in research with blind and autistic children (Rutter, 1978; Wing, 1976; Wolff and Chess, 1964), profound effects are seen. Many of the important functions eye-contact serve, including understanding and using language in conversational competence, are not available to these children.

In order to participate in conversation, and also use backchannel behaviors effectively, children need to learn the rules of conversation. Research shows that children become exposed to this idea very early in life. Evidence of early dialogue between infants and adults has been seen (Bateson, 1975; Stern, Jaffe, Beebe and Bennett, 1975). Additionally, research has demonstrated that children acquire an awareness of the rules of conversation and of turn-taking skills early in their development (Fein, 1975).

Since research has shown that responsive behaviors are present since infancy, the important developmental issue then becomes not when backchannels first appear, but rather, how these responsive listening behaviors change in form and function, and how the repertoire of these responsive behaviors is expanded over developmental time. A series of research studies has begun to explore these issues.

Studies (Miller, et al., 1985) have demonstrated that preschool children use backchannels. Children as young as two years of age are seen to be capable of producing messages which show that the speaker's message has been received. With increasing age more responsive listening behaviors are seen. This research indicated that older children are more able to focus on the adult's frame of reference (e.g., experiences, thoughts, and feelings).

An attempt to look at the relationship between backchannels and social attraction was first completed in



1986. Lechner (1986) replicated the paradigm created by Miller, et al. (1985) to investigate the use of backchannel behaviors in relation to preschooler's social attractiveness as rated by teachers and peers. The rationale for this hypothesis, connecting backchannel behaviors with social attractiveness, comes from research on adults where this relationship is already established and by examining related research into social attractiveness and peer relationships. It is apparent among theorists, from Piaget to Erikson, who have emphasized that children's interaction with peers provides the context for cognitive development, the growth of social skills, the evolution of self-concept, and the establishment of moral and social values (Cornell, 1990).

Numerous investigators have confirmed that childhood difficulties in peer relationships are associated with serious maladjustment in adulthood (Parker and Asher, 1987). Studies show that children with inadequate communication skills, or those children seen by peers as having poor communication skills, tend to be less popular than their more "skillful" peers (Rubin, 1978; Groltman, Gonso, and Rasmussen, 1975).

Social psychologists have long understood that young children have many social and emotional goals to accomplish as they enter school. Research (Yauman, 1980) indicates that self-concept, not intellectual ability alone, is an important contributing factor to academic success. That is,

children who feel good about themselves are more confident in their ability to cope with peer relationships, family dynamics, and school demands, and are more likely to be successful learners.

Lechner's (1986) investigation in the use of backchannel behaviors in relationship to preschooler's social attractiveness did not establish a significant relationship between the use of responsive behaviors and popularity ratings. It was hypothesized that listener skills may not be important variables for a preschooler's determination of popularity. Since this research did not establish any clear links in preschool age children, the research was further extended into elementary age children. In Lechner's more recent study (1991), the responsive listening behaviors of elementary school age children were studied in relationship to academic achievement along with social attraction. This research found that some students who are rated as socially attractive, tend to engage in more responsive listening skills, such as smiling. These students have better developed academic and language skills, are female, and tend to be older than peers.

Doing similar research, Hess and Johnson (1988) found somewhat different results from Lechner (1991). The differences in obtained results appear to be due to methodological differences between the research. In the Hess and Johnson investigation, an instructional interaction

was created by using a game situation. The investigator actually taught the student how to play a game instead of engaging them in a conversation or discussion. The frequency of backchannel responses increased significantly with age. In fact, the responses actually increased threefold from ages seven to eleven. Additionally, children who provided more listener responses demonstrated a significant relationship between backchannel responses and a variety of speaker cue combinations.

Unfortunately, not much is known regarding the responsive listening behaviors of adolescents. Backchannel behaviors have not been studied in this important age group. We cannot make additional assumptions regarding the developmental pattern of responsive listening skills as there are no data to support notions.

In summary, research has shown that children as young as two use backchannels in communication. By the age of six, children appear to have all the backchannel responses within their repertoire of available responses. As children mature, they seem to use backchannels with greater frequency. That is, the number and kind of these responsive listening skills expand over time. The evidence indicates that older children use these skills with purpose and intent more than younger children. This seems to fit well with the research completed with adult populations. Mature listeners are seen to purposefully use backchannels. Until additional

research is completed, gaps in understanding the development of these important social behaviors remain.

The present research has several goals. The first goal is to extend the findings on backchannel conversational responsiveness from studies including preschool and early elementary age children to adolescents. Specifically, do older adolescents use more responsive listening behaviors than younger adolescents? Will females use more non-verbal responsive listening skills than males?

The second goal is to investigate the relationship academic achievement has with regard to responsive listening skills. Will higher achieving students use more responsive listening behaviors than lower achieving students?

The third goal is to investigate some new issues with respect to responsive listening skills. Based on findings from previous research, do students rated as more socially attractive use more responsive listening skills? Are there any relationships to self-esteem? Do students who internally feel better about themselves use more responsive listening skills?

To address these goals and questions, several instruments were used. The Coopersmith Self-Esteem Inventory (Coopersmith, 1981) includes 58 evaluative attitudes towards self. This device has been shown to reliably describe factors seen as important to self-esteem (Coopersmith, 1967; Spatz and Johnson, 1973; Kimball, 1973).

To create an instructional situation to allow for responsive listening skills to naturally occur, a commercial board game, the "Addams Family Reunion Game" (1991) was used. Research (Hess and Johnson, 1988) has demonstrated that a game situation is a reliable way to elicit responsive listening skills. Finally, a popularity questionnaire, updated from previous research (Lechner, 1991) was used by the examiner to determine social attractiveness. The examiner was asked to rate each subject on how they enjoyed working with that individual subject.

The subjects in the study attended a predominately Caucasian northwestern suburban Chicago high school of middle socio-economic status. There were 105 subjects divided into two groups. The first group ranged in age from 13-09 to 15-01 years of age; the second group, from 16-09 to 18-04 years of age.

A conference room at the school was prepared to provide a standardized testing environment where video-taping took place. Various types of data were collected for later analysis. Listening skills were measured, self-esteem inventories were completed, social attractiveness was measured and achievement scores were obtained from student records. Three types of measures served as dependent variables in this study. These are the same variables that were identified in Miller, et al. (1983). The first two measures are timings. These include the amount of time that

subject engages in smiling and gazing directed towards the examiner. Both smile and gaze are tabulated as separate dependent measures. Total interaction time was also measured. A third dependent measure was a comprehensive or "total" score. This score included the total "yeses", "okays", "ohs", "uh-huhs," and head nods that individual subjects engaged in during the interaction.

After all video-taping data were collected, the experimenter trained independent observers for coding the experimenter-student interactions. Using the VCR in their homes, coders measured the responsive listening behaviors described. Following this, statistical procedure were utilized to analyze the data.

The next chapter, Chapter II, provides an indepth review of the literature which is the basis for this research. It begins with definitions, terms and assumptions important to this research.

## CHAPTER II

### LITERATURE REVIEW

This chapter will examine the literature to explore the developmental pattern of responsive listening behaviors also known as "backchannel" behaviors. To begin, important definitions, terms and basic assumptions will be discussed. Since the knowledge base in responsive listening skills actually began in research done with adult populations, this review will begin with the adult literature and then expand downward into research with children. This research will explore the many individual differences, functions, and uses which have already been established in adults. Next research with infants and preschoolers will indicate when responsive listening behaviors first appear and demonstrate the importance of these skills to human development. Next, relationships between important personality variables such as peer popularity, social attractiveness and self-esteem will be discussed. Research with early to middle elementary school age children will then illustrate how responsive listening behaviors begin to change over developmental time, in form, use, and function. Tangential research with adolescents will be presented, as this important age group has yet to be studied with regard to responsive listening

behaviors. Finally important new research questions will be hypothesized which may begin to close the gaps in the knowledge base and complete the developmental pattern of responsive listening behaviors.

### Definitions and Terms

This first section will operationalize terms and present assumptions required to interpret the literature. As will be shown, responsive listening skills are social behaviors which facilitate conversation by acknowledging that one is listening, attentive, interested in, and understanding concerns of another.

Backchannels belong to a class of behaviors which are seen to be socially responsive (Davis and Perkowitz, 1979; Miller et al., 1983). Researchers classify behaviors as "responsive" once they have been shown to be relevant to, or related to the preceding behavior. Responsive behaviors are important to study as these behaviors are seen to serve several critical functions in communication and social interactions. These behaviors indicate interest in, and attention to, what another is saying or doing. They have also been shown to help regulate and maintain social interactions (Miller et al., 1985). For instance, Davis and Perkowitz (1979) found that when the listener response related to the speaker's message, the listener was seen to be better liked by the speaker. In related research, Rosenfeld (1966) found that subjects often use responsive



behaviors when they seek attention and approval from the speaker.

The literature indicates that several terms have been used to describe responsive listening behaviors. The most commonly used term, "backchannel behaviors," was first coined by Yngve (1970). This definition includes such verbalizations as "I see," "okay," "uh-huh," and "oh." Non-verbal signals such as head nods, smiles, frowns, and facial expressions are also included. Other terms such as "listener responses" (Llewellyn, 1967) and "accompaniment signals" (Kendon, 1967) have been used to describe essentially the same behaviors. For the purpose of this research the term "backchannels" will be used to describe responsive listening behaviors.

The term backchannel implies that there are two channels in conversation which are operating simultaneously. The "main" or "front" channel is seen as the spoken word. In the front channel the speaker uses words or gestures to send a message to the listener. The "back" channel is the medium over which the listener gives useful information to the speaker without actually claiming the floor.

Assumptions. The backchannel paradigm makes two assumptions. The first assumption is that the listener is not a passive participant. It is important that the listener be an active participant in conversation. We know that when communicating, information is not unidirectional.

Therefore the listener must be constantly collaborating with the speaker. The listener must acknowledge that he/she is listening, attentive, interested in, and understands the content of the speaker's message. The verbal and non-verbal backchannels are the vehicle with which this information is communicated back to the speaker.

The second assumption is that backchannels are not seen to constitute a speaking turn. There is a wealth of research available in literature which has studied the rules of conversation and "turn-taking." From this research we know that conversations typically proceed by a more or less orderly exchange of speaking turns (Argyle, 1975). They are cues, verbal as well as non-verbal, which are seen to help or facilitate conversation. Backchannels are cues used by the listener to signal to the speaker when the speaker may or may not relinquish the floor. When a listener, or an "auditor," uses a backchannel, research shows that there seems to be a mutual understanding that the speaker retains the turn and that he or she will continue the turn immediately following the completion of the backchannel (Kendon, 1967; Yngve, 1970; Duncan and Nederele, 1974).

In sum, backchannels are socially responsive listening behaviors. Their presence and use in conversation indicates that the listener is an active, not passive participant. Backchannels are non-intrusive in that their use does not

constitute a speaking turn. They are listening behaviors which help to facilitate conversation.

The next section will review the literature with adults to show the many important functions backchannels serve for adults. As will be shown, backchannels serve to guide and shape social interactions, maintain attention, and have been related to personality variables.

#### Some Important Functions of Backchannels for Adults

Research has shown that adults differ in their ability to be attentive and responsive while in a listener role. This section will review key research to present an overview of these individual differences.

The use of backchannel cues with adults has been linked with many variables. They have been linked with mutual interest, attention, attraction, popularity, intimacy of friendships, and the ability to elicit intimate self-disclosure.

Miller et al., (1983) found that adult women who use backchannel behaviors are frequently seen to be easier to disclose intimate information to, better liked, more popular, and having more intimate friendships than those females using fewer backchannels. Purvis, Dabbs and Hooper (1984) found men who use backchannels generally do so to stimulate conversation; women, on the other hand, relied on non-verbal behaviors such as smiling and gazing in conversations.

Backchannels have also been seen to relate to measures of social attraction and liking. Rosenfeld (1966) found subjects employed more backchannels when seeking approval. Similar results were seen by Davis and Perkowitz (1974) in that attraction was found to be assisted when responses, relevant to the speaker's remarks were used by the listener. Finally, Uhlemann and Lee (1990) found that subjects who reported a high reliance on non-verbal cues, of which backchannels are a part (e.g., eye contact, smiling, head nods, among other responses) actually rated the target person as more expert, trustworthy, and attractive. These studies indicate that there are many individual differences with regard to the use of backchannel behaviors by adults. Backchannel behaviors are under the control of the adult and can be used differently to obtain desired results. This has not been documented in research with children.

### Infant Research

There are many responsive behaviors seen in human infants which can be classified as backchannel behaviors. This section begins with a review of the literature with infants, and very young children, to discover when backchannels are first seen. Concurrently, the critical importance of these behaviors is discussed.

Research has documented that the first smile by a human infant usually appears by the third week of life (Wolff, 1963). Infants fixate and smile at eyes by the fourth week

of life (Argyle and Cook, 1976; Wolff, 1963). Other studies suggest that newborns engage in eye-contact with the mother as much as 25% of the time during the first week after birth (Als, 1977; White, 1975). However, it is not until the eighth to twelfth week of life that the first social smile appears. A social smile is one that is in response to another human's interaction (Sroufe and Waters, 1976).

Visual interaction between mother and infants has been shown to play a critical role in social development. Smiling and gazing is used in developing attachment between mother and child (Argyle and Cook, 1976). Robson (1967) indicated that early mutual gaze is important for the mother, in that it acts as a release of maternal response and strengthens her attachment to the infant.

Gaze patterns and smiles are important beginnings to communication. Research (Als, 1977; Hutt and Ounsted, 1966) demonstrated that gaze, or infant eye-contact, with the mother induces many communicative and attachment behaviors. Mothers were seen to begin smiling, talking or singing once eye-contact with the infant had been made. Eye-contact was seen to induce the mother to position her face in front of the newborn. The infants then begin to learn to coordinate these behaviors with the adult.

Much can be learned regarding the importance of eye-contact, or gazing as a responsive behavior, by examining the literature on autistic children. One of the most

immediately noticeable characteristics of autistic children is their lack, or even avoidance, of eye-contact with humans (Rutter, 1978; Wing, 1976; Wolff and Chess, 1964). Many of the important functions eye-contact serve, including understanding and using language and conversational competence, are not be available to autistic children. Many autistic children do not make eye-contact in the "normal" fashion. Stern (1977) noted that some autistic infants actually averted eye-contact by engaging in a series of avoidance behaviors. In Stern's research, the interactions between mother and the autistic child became so frustrating for the mother that the interaction terminated on a somewhat "hostile" manner.

Other research (Eibl-Eibesfeldt, 1974) has shown that children born blind, or blind and deaf, will laugh, cry, smile, frown, and even stamp their feet. Blind infants have even been shown to "stare" towards familiar voices (Eibl-Eibesfeldt, 1974). Irrespective, blind children lack basic sensory and experiential capabilities for acquiring some responsive behaviors. Research (Fraiberg, 1974) notes that adults interacting with blind infants found blunted affect, depressed facial expressions and noted an apparent lack of interest. Some reported an actual "unfriendly appearance" in these children. It seems that blind children are at a disadvantage when learning important signs and symbols necessary for the development of later communication skills.

In order to participate in conversation and also use backchannel behaviors, children need to learn the rules of conversation. Research shows that children become exposed to this idea very early in life. Studies (Bateson, 1975; Stern, Jaffe and Beebe and Bennett, 1975) show an alternating vocal style between infants and adults. This can be seen as a form of early dialogue. This vocal style appears similar to that of conversing adults. Initially, infants and mothers engage in a great deal of simultaneous vocalizations when engaged with one another (Als, 1977; Hutt and Ounsted, 1966). However, research shows that this dialogue usually soon terminates with the infant's shifting to a listener role (Stern, 1974). These studies provide evidence that very young children are learning the rudiments of turn-taking and important responsive listening skills.

Fein (1975) provided evidence that children acquire an awareness of the rules of conversation and other turn-taking skills early in their development. Infants at eighteen months stayed furthest away when their mother was in social conversation, came closer when adults were not talking, and came closest when adults were playing cards. This research seems to provide evidence that young children are somewhat sensitive to interactions on which they are not directly a part. The infants were observed to vocalize most during adult silence and least during adult conversation (Fein, 1975).

This section has thus far presented a brief review of the literature. Research demonstrates many responsive behaviors are present since infancy. However, while many responsive behaviors are seen, their function and purpose are yet to be developed. The research indicates that infants use responsive behaviors in a manner which appears somewhat reflexively without purposeful intent. These behaviors gain attention for the infant and serve to maintain general social interaction. Next we have seen the importance of these behaviors in that their absence, as noted in research with blind and autistic youngsters, can have profound effects. Lastly, research has shown that young children seem to learn, early on, the rudimentary rules of conversation. These skills are important to development of communication skills, conversational competence and general social interactions.

The next section will address recent research on the further development of backchannel behaviors. Since we know that responsive behaviors are present since infancy, the developmental issue then becomes not when backchannels first appear, but rather, how these responsive listening behaviors change in form and function and how the repertoire of these responsive behaviors is expanded over developmental time.

#### Preschool Research

This section explores recent research with backchannel behaviors that begin to fill in the gaps in our



understanding of the development of these behaviors. As research is reviewed, studies with preschool children will demonstrate that young children use responsive listening behaviors. Additional research with the same age group attempts to correlate these behaviors with important personality variables. Finally, more recent research, with early-to-middle elementary school-age children, present understanding of key developmental trends.

In the first of a series of three research studies by the same investigator (Miller et al., 1985; Lechner, 1986; Lechner, 1991), the development of responsive listening behaviors has been studied with preschool age children. In this research (Miller et al., 1985), preschool children were video recorded while listening to an experimenter discuss several topics determined to be of high interest to children. As the adult spoke, the child was provided with an opportunity to use a variety of conversational cues.

This study demonstrated for the first time that preschool children use backchannels. Children as young as two years of age were seen to be capable of producing messages which show that the speaker's message had been received. With increasing age more responsive listening behaviors were seen. Older preschool children use more head nods, spend more time talking, smiling and gazing in adult-child interactions. This first in the series of research studies confirmed experimenter predictions that children as

young as preschool age actively employ responsive listening behaviors in conversations.

Considerable individual differences were seen at each age level in the types and numbers of responsive cues learned. Older children were not simply emitting more responses than younger children. The responses were showing a trend indicating that with increasing age, children were more able to focus on the adult's frame of reference (e.g., experiences, thoughts, and feelings). Additionally, evidence suggested that the use of certain non-verbal cues (e.g., head nods) developmentally precedes the use of verbal backchannel behaviors (e.g., uh-huhs). Moreover, preschool children are further developing the give and take of conversation.

This research demonstrated that young children use backchannels. It did not clarify developmental questions as to how these behaviors were being expanded across developmental time and why the form and function of these behaviors was also seen to change. This research team hypothesized that these backchannel behaviors may be closely correlated with such variables as peer popularity and social attraction.

#### Important Factors for Social Attraction in Children

This next section will explore the critical role peer acceptance or rejection plays in child development. An important role of backchannels in the classroom will also be

seen. Finally, the importance of good communication skills in children will be demonstrated. This will provide the links between backchannels and variables such as peer popularity and social attractiveness and self-esteem.

Many factors have been seen to be important for social attraction in children. Relationships with peers and teachers have been seen to be important factors. The child's communication skills and academic achievement are also important. This section will review relevant literature to discover why researcher in responsive listening have seen the importance of linking the development of these behaviors to personality variables.

Importance of Peer Relationships. Peer relations are but a few critically important factors in child social development. Theorists from Piaget to Erikson have emphasized that the children's interaction with peers provide a context for cognitive development, the growth of social skills, the evolution of self-concept, and the establishment of moral and social values (Cornell, 1990). Clearly social and communication skills which relate to peer acceptance, and the development of self-esteem, need to be understood by educators and psychologists.

Numerous investigators have confirmed that childhood difficulties in peer relations are associated with serious maladjustment in adulthood (Parker and Asher, 1987). Children who are unpopular with their peers in one setting

often continue to have difficulty making friends in the future (Rubin and Mills, 1988). Other research has shown that unpopular children face considerable difficulties adjusting to societal expectations (Roff, 1961; Roff, Sells, and Golden, 1972; Cowen, Pederson, Babigan, Izzo and Trost, 1973).

Importance of Teacher Relationships. Social psychologists have long understood that young children have many goals to accomplish as they enter school. One such goal is to make friends and establish successful peer relationships. Another goal is to secure teacher approval and to make a favorable impression. Children learn to accomplish this goal in many ways. One way is through academic performance. Another is to comprehend and respond to the teacher's non-verbal communications. Teacher know, and often times so do their students, that they respect some students more than others and that they like some students more than others. Teachers also know that some students like and respect them more than others. Why? Richey and Richey (1978) found that teacher's non-verbal behaviors, specifically glance, facial expression, bodily movements and personal space, communicate cues by which favoritism or rejection is communicated to students. This is an important study in that it demonstrates that many non-verbal cues, of which backchannels are part, communicate messages to students which can have far reaching consequences. Studies

have shown (Knott, 1979; Koch, 1971; Smith, 1979) that teachers seem to actually prefer children who are more attentive and who engage in significantly more smiling and gazing. Other research (McCroskey and Daly, 1976) found that elementary teachers actually reported negative expectations for academic success for quiet children. They also set positive expectations for more talkative students.

Importance of Communication Skills. Studies show that children with inadequate communication skills, or those children seen by peers as having poor communication skills, tend to be less popular than their more "skillful" peers (Rubin, 1978; Groltman et al., 1975). Other research (Quiggins, 1972; Lustig, 1977; and Hayes and Meltzer, 1972) demonstrates a high correlation between amount of talk and interpersonal judgements. Simply stated, the more talk, the more positive the judgements. Similar findings have been demonstrated with adults. Simply the amount of talk can have a remarkable effect and be a powerful determiner of adult-peer perceptions. Quiet adults, as are quiet children, are negatively perceived by peers (Hayes and Meltzer, 1972; Allgier, 1974). Children as young as nine to twelve demonstrate a strong tendency to actually reject shy or quiet persons (Richmond, Beatty and Dyba, 1975).

Other research (Lustig, 1977) has shown that an individual's failure to participate in discussions not only affects the perceptions that others have of that person, but

actually affects that individual's self-concept and subsequent self-presentation. That means that being treated as shy, retiring and quiet can actually lead a person to take on these qualities on the basis of others' response to them (Farina, Allen, and Saul, 1968; Farina, Gliha, Beaudreau, Allen, and Sherman, 1971). Once a person defines him/herself in terms that others apply to them, then it becomes more likely that they will behave in accordance with those descriptions.

Importance of Academic Achievement. Research (Simon and Simon, 1975; Yauman, 1980) indicates that self-concept and intellectual ability are important contributing factors to academic success. That is children with relatively higher I.Q.'s who also feel good about themselves are more confident in their ability to cope with peer relationships, family dynamics, and school demands, and are more likely to be successful learners.

Since no clear links were established between social attractiveness and peer popularity with backchannel behaviors in young children, perhaps older children may use backchannels differently. This next research also related academic achievement to the use of backchannel behaviors. Are students who use more responsive listening behaviors more academically successful, and are these behaviors correlated with higher levels of peer popularity, social attractiveness, or self-esteem?

### Research Linking Backchannels With Personality Variables

The first attempt to look at the relationship between backchannels and social attraction was in 1986. Lechner (1986) replicated the paradigm created by Miller, et al. (1985) to investigate the use of backchannel behaviors in relation to the preschoolers social attractiveness as rated by teachers and peers. The results of this research did not establish a relationship between the use of responsive behaviors and popularity ratings. It was hypothesized that listener skills may not be important variables for a preschooler's determination of popularity.

While a link was not established between the use of responsive listening and social attractiveness, the study was important. Developmental findings, first seen in the original research completed in 1985, were replicated with accuracy. Clearly emerging was the development of these skills with use. By six years of age, children seem to have these skills in their repertoire of available responses.

Since the first study did not establish any clear links between the use of responsive listening skills and social attractiveness in preschool aged children, the research was further extended into the elementary aged children. In Lechner's more recent study (Lechner, 1991) the responsive listening behaviors of elementary school age children were studied. In this research, older children's use of backchannel behaviors was examined in relationship to

academic achievement and social attraction. The experimenter again measured backchannel behaviors through observations of adult interactions with children as students listened to topics of high interest.

The results indicated no significant difference, either in number or in kind, between first and fifth graders use of responsive listening skills. Lechner indicated that it was apparent that responsive listening skills may be fully developed by six years of age. What was important is that these responsive listening skills began to change qualitatively in terms of use and function over developmental time. Emerging was a relationship between the use of these behaviors and personality variables such as social attractiveness.

The results indicated a significant relationship between the ratings of popularity and smiling. Boys, rated as better liked by their teachers, tended to smile more.

Gender differences also began to emerge at this age. It was discovered that girls did more gazing than boys. Also girls rated as more popular used more non-verbal skills, such as gaze, than do boys. The findings begin to approach results already established in the adult research.

Other links were established. A clear relationship was seen between the use of responsive listening skills and academic achievement. Students who utilized more responsive



listening skills earned higher scores on measures of academic achievement in school.

In summary, this research found some students who are rated as socially attractive, tend to engage in more responsive listening skills, such as smiling. These students have better developed academic and language skills, are female, and tend to be older than peers.

Doing similar research, Hess and Johnson (1988) found somewhat different results. As in Lechner's research, subjects were three groups of children aged 7.5, 9.5, and 11.9. Subjects were video recorded in a one-on-one situation with an adult. However, in this investigation, an instructional interaction was created by using a game situation. The investigator actually taught the student how to play a game instead of engaging them in a conversation or discussion. There were several reasons cited as to why a game situation would be conducive for observing backchannel behaviors. First, the game situation allowed a controlled but similar experience for all subjects. Secondly, the game explanation is seen to be one that is a situation which has a high demand for collaboration and is more likely to encourage listener feedback (Duncan and Fisk, 1977; Kendon, 1967). Thirdly, games are seen to be intrinsically motivating to many children and create a high probability for response.

As predicted, the frequency of backchannel responses increased significantly with age. In fact, the responses actually increased threefold from ages seven to eleven. Additionally, children who provided more listener responses demonstrated a significant relationship between backchannel responses and a variety of speaker cue combinations. That is, as the children's overall response frequency increased, they responded to a higher proportion of context that had fewer cues. These differences were not seen in Lechner's research. That is, Lechner's research did not see the dramatic increase between younger and older respondents. The differences in the obtained results are hypothesized to be due to methodological differences between the research. Hess and Johnson (1988) engaged respondents in a game situation; Lechner (1991) used a simulated conversation.

### Adolescents

Not much is known regarding the responsive listening behaviors of adolescents as backchannel behaviors have not been studied in this important age group. However, some related research has studied backchannel behaviors, but these responsive listening behaviors have not been the focus of the research. This section reviews tangential research in non-verbal communication skills with adolescent subjects ranging in age from 14 through 18 years of age.

Recently, Noller and Callan (1989) investigated the function of non-verbal communication in families with

adolescents. It was hypothesized that many non-verbal behaviors, of which backchannels are a part, play a role in the impressions that parents and adolescents form about one another. The non-verbal behaviors studied were facial expression, gestures and head movements. Specifically, gaze, smile, and head nods, among many other non-verbal behaviors, were quantified as they occurred in the video-taped parent-adolescent interaction. After the interaction, each participant rated themselves on how involved they felt they were with each family member.

Several interesting differences were seen in responsive listening behaviors in this research. Adolescents smiled more and made more head movements than either of their parents. When adolescents were more involved with their fathers, they tended to use more smiles and gazes, while those rated by their mothers as more involved used more head movements.

In a similar vein, Levin and Sulton-Smith (1973) investigated eye-gaze with children and adults in same sex dyads. They measured eye-gaze in not only adolescents, but in young children and adults. This research found that children's eye-gaze continued to increase between ages six through eight, but decreased during early adolescents. These differences were interpreted to provide evidence that the reported feelings of lack of self-confidence decreased

eye-gaze during early adolescents. A more gradual increased and more "typical" adult levels was seen after age 15.

### Summary and Goals

This chapter has provided a review of the literature exploring the developmental pattern of responsive listening behaviors also known as "backchannel" behaviors. Important definitions, terms and basic assumptions have been discussed. Presented research began with the adult literature and then expanded downward into research with children. As was shown, the research with adults explore the many individual differences, function and uses established with adult populations. This chapter also discussed research with infants and preschoolers to indicate when responsive listening behaviors first appear, and to demonstrate the importance of these skills to human development. Relationships between important personality variables such as peer popularity, social attractiveness, and self-esteem have also been discussed. Research with early to middle elementary school age children have illustrated how responsive listening behaviors begin to change over developmental time, in form, use and function. This final section presents important new research questions and goals of the present investigation. These questions may begin to close the gaps in the knowledge base and complete the developmental pattern of responsive listening behaviors.

The first goal of the present study is to extend the findings on backchannel conversational responsiveness from the adult literature, from the studies including preschool subject, research on elementary age children, to research with an adolescent population. Specifically, do older adolescents use more responsive listening cues than younger adolescents? Are gender differences seen with respect to the type and function of listening skills utilized?

A second goal of the present study is to extend earlier research findings. Do higher achieving adolescents use more responsive listening behaviors than lower achieving adolescents? Will students rated as more socially-attractive use more responsive listening skills?

The third goal of this study is to investigate some new issues with respect to responsive listening. From that which we know regarding academic achievement and self-esteem, is it possible to extend these findings into the field of responsive listening skills? Do students who rate themselves higher on instruments measuring self-esteem use more responsive listening skills?

The following questions address the main issues raised in this research.

1. Do older adolescents use more responsive listening behaviors than younger adolescents?
2. Are gender differences seen with respect to the type and function of listening behaviors utilized?

3. Do higher achieving students use more responsive listening behaviors than lower achieving students?
4. As a group, do students rated as more socially-attractive use more responsive listening skills?
5. As a group, do students with higher self-esteem use more responsive listening behaviors than students with lower ratings of self-esteem?

The next chapter, Chapter III, begins with the research questions and predictions. Following this is a detailed discussion of the instruments and procedures utilized to address the issues of this research.

## CHAPTER III

### METHOD

This chapter begins with a list of research questions and predicted outcomes. Next, there is a discussion of the instruments that were utilized to measure listening skills, social attraction, and self-esteem. The discussion of the procedures includes a description of the testing room, subject populations, subject orientation, and presentation of procedures used to measure responsive listening, social attraction, academic achievement, and self-esteem.

The last section in this chapter focuses on the methods of statistical analysis. This includes a discussion of the specific dependent measures, the procedures used for training observers in coding video tapes, and the specific statistical procedures utilized to analyze the data. Finally, there is a chapter summary.

#### Research Questions and Predictions

The following questions address the main issues raised in this research:

1. Do older adolescents use more responsive listening behaviors than younger adolescents?
2. Are gender differences seen with respect to the type and function of listener behaviors utilized?

3. Do higher achieving students use more responsive listening behaviors than lower achieving students?
4. As a group, do students rated as more socially attractive use more responsive listening skills?
5. As a group, do students with higher self-esteem use more responsive listening behaviors than students with lower ratings of self-esteem?

From these questions, the following predictions were made:

1. Older adolescents use more responsive listening behaviors than younger adolescents.
2. Females use more smiling and eye gaze, while males use more head nods.
3. Higher achieving students use more responsive listening behaviors than lower achieving students.
4. Students rated as more socially attractive use more responsive listening skills.
5. As a group, students with higher self-esteem use more responsive listening behaviors than students with lower ratings of self-esteem.

### Instruments

This section describes the instruments used in this study. The first, a commercial board game, was used as a mechanism for interacting with subjects to elicit responsive listening skills. The second, the Coopersmith Self-Esteem Inventory (Coopersmith, 1981), was used to measure self-



esteem. The third, a social attractiveness scale, was used to assign a score of social attractiveness to each student.

Game. The Addams Family Reunion Game (Pressman, 1991), a commercial board game, was used as a mechanism for interacting with subjects to elicit responsive listening skills. There are several reasons for selecting a game situation. First, an environment conducive to observing backchannel behaviors was created. Second, the game situation allowed a controlled, but similar experience for all students. Thirdly, the game experience is seen as a situation which demands collaboration and is more likely to encourage listener feedback. Finally, games are seen to be intrinsically motivating to children and enhance the probability for response (Hess and Johnson, 1988). The Addams Family Reunion Game was selected because there has been a recent surge in interest among adolescents with the characters of the Addams Family. There was a recent movie based on these characters which was commercially successful.

This game itself recreates situations from the television show and the recent movie. The game consists of the game board, a spinner, instruction cards, tokens, and movers. The game board is brightly decorated with photographs of the family members, illustrations of spooky scenes, and the family graveyard.

To insure attention and maximize listening, each subject was told that he or she might be asked to teach

another student the game at a later time. Every effort was made so that instructions for the game were presented in the same fashion to each subject. The experimenter followed a script (see Appendix A) that was rehearsed in order to present a more natural presentation.

Self-Esteem Inventory. The Coopersmith Self-Esteem Inventory (SEI) (Coopersmith, 1981) was used to measure self-esteem (see Appendix B). The Self-Esteem Inventory (SEI) includes 58 evaluative attitude towards self presented in the form of a statement. For each statement adolescents were asked to indicate either "like me," if it described how they usually felt, or "unlike me," if the statement did not represent how they felt about themselves. This self-esteem measure covers attitudes associated with a number of different aspects of life, including: (1) general ("things usually don't bother me."); (2) social ("I'm a lot of fun to be with."); (3) home and parents ("I get usually upset at home."); and (4) school ("I find it very hard to talk in front of the class.").

The self-esteem score is assigned based on each adolescent's responses to the 50 esteem items. The score is calculated by totaling the number of items marked in a manner that indicates high esteem. This total is multiplied by two to yield a maximum score of 100. For the purposes of this study, and throughout the rest of this paper, self-

esteem is operationalized as the score derived from the Coopersmith Self-Esteem Inventory.

The Coopersmith was selected to measure self-esteem because it has been shown, in the literature (Mullis, Mullis and Normondin, 1992; Rubin, 1978; Coopersmith, 1967; Spatz and Johnson, 1973; Kimball, 1973), to reliably describe factors seen as important to self-esteem. Spatz and Johnson, in a evaluation of internal consistency of the SEI, obtained correlation coefficients of .81, .86 and .80 for grades five, nine and twelve, respectively. Kimball (1973), doing similar research, tested 7,600 public school students in grades four through eight in all socio-economic ranges and of mixed races, and reported coefficients ranging from .87 to .92.

Social Attractiveness Measure. Social attractiveness was measured using a seven point Likert-type scale (see Appendix C). This scale was adapted from a measure of popularity originally developed by Lechner (1986). This scale asked the examiner how much she enjoyed interacting with each individual student. An enjoyable student was defined as one with whom the examiner might like to sit beside at lunch time, or one with whom the examiner might enjoy additional time to chat. A score of "1" indicated little enjoyment; a score of "4" average enjoyment; a score of "7" indicates a very enjoyable experience. Based upon

this rating scale, a score of social attractiveness was assigned to each student.

### Procedures

This section provides an explanation of the specific procedures used to collect data. This includes a description of the subjects, the experimenters, the testing room, and the procedures used to familiarize subjects with the testing room and the experimenter. The method utilized for testing for responsive listening skills, self-esteem, and academic achievement will then be described. Before the actual testing of subjects begin, an experimenter was selected, a trial run conducted, a testing room organized, and subjects were familiarized.

Subject Selection. Subjects were high school freshmen and high school seniors. These groups were selected in order to study two distinct age groups of adolescents. A total of 105 students, thirty-seven males and sixty-eight females, participated in this study. As stated elsewhere all attended William Fremd High School, a predominately Caucasian middle socio-economic class secondary school, located in Palatine, Illinois. Because the majority of the participants were Caucasian (African-American  $n=1$ ; Hispanic  $n=2$ ; Asian  $n=1$ ), race was not considered a variable of concern. The students ranged in age from 167 months (13-09 years) to 221 months (18-04 years) with a mean age of 189

months (15-07 years). Only those students whose parents provided written permission were allowed to participate.

In order to acquire subjects, the experimenter first introduced the research to students during general education survey classes or during study halls. The students were told that this research investigated the ways adolescents and adults talk to each other. Students were informed about being video taped and told the approximate amount of time their participation would take. Next students were informed that they would be given an inventory which asked descriptive questions (Coopersmith Self-Esteem Inventory). They were told that their participation was voluntary, that confidentiality was assured, and that the video-tape would be viewed by the experimenter before it was erased. A parent letter and permission slip (see Appendices D and E) were distributed and questions were answered. Finally, the students were informed that their participation in the project would be scheduled during their lunch time or their free period. (This step, requiring participation on non-instructional time, was required by the school's principal.)

#### Preparation for Testing

Testing Room. A room was reserved for testing purposes. The room was a small conference room utilized by special services personnel to conduct parent and staff conferences. There was a large conference table and chairs in the room. The examiner sat directly across the table

from the subject. The game was already displayed on the table. A portable video cassette recorder was placed to the left and slightly behind the examiner. This arrangement allowed the experimenter to make direct eye-contact with the student, while not obscuring the camera's view of the student's face. The video camera was then set to zoom on the subject's face and shoulders only.

Examiner Training. The experimenter had a female graduate student who served as an examiner during data collection. Her job was to interact with students using the commercial board game, video record these interactions, administer the self-esteem inventory, and finally rate her own social attraction to each student with whom she interacted. The graduate student was informed only that the purpose of the research was to study responsive listening skills. In an effort to prevent experimenter bias, the suspected link between social attractiveness and responsive listening was not discussed with her. She was given a script (Appendix A) and a copy of the board game to study and learn. Studying the script provided for a standardized format that was then used when interacting with each subject. Next, the examiner was trained to operate the recording equipment, she was shown the testing room, and was then provided with schedules indicating subject appointment times. Finally, as an opportunity to provide additional training, a trial run was conducted.

Trial Run. Prior to the actual collection of data, a trial run was conducted. The purpose of this pilot was to refine the script, provide the graduate student opportunity to familiarize herself with the equipment, and practice the procedures with students before data collection.

Five students participated in the pilot study. They were informed of the purpose of the study and parental permission was obtained. The students were video taped, but these tapes were not analyzed and no other data were collected from these participants.

During the pilot, student volunteers gave suggestions on how to improve the clarity of the instructions and suggestions were also provided on how to create a more natural presentation. At the end of the pilot study the refined script provided interactions which averaged five minutes. The instructions were seen to be clear by subjects.

Subject Familiarity. Prior to collection of data, subjects were provided with an opportunity to become familiarized with the graduate student with whom they were to interact. This step was done to provide consistency and continuity with other research conducted on responsive listening behaviors (Miller et al. 1985; Lechner, 1991). Moreover, this step has been seen to be important to ensure that students were not overly anxious during data collection.

Upon arrival to the testing room, on the day of actual data collection, the subjects were given an opportunity to become comfortable and familiar with the setting. Subjects were introduced to the graduate student experimenter, shown the video equipment, and asked if there were any additional questions. The sessions began after all questions had been answered.

### Data Collection

Data from different sources were collected for later analysis. Listening skills were video-recorded, self-esteem inventories completed, social attractiveness measured, and achievement scores obtained from student records. The procedures for acquiring this information are outlined below.

Testing for Responsiveness. After the students were familiar with the experimenter and the testing room, an interaction was video recorded. Each interaction took approximately five minutes. The examiner taught each student the commercial board game. The board game was displayed on the table to help demonstrate the instructions. The examiner followed a script of instructions (see Appendix A) during the interaction. To ensure attention each subject was told that he or she might be asked to teach another student the game at a later time. At no time did the examiner verbally request a response from the subjects, but she was free to respond to such responses as they occurred.



At the conclusion of the interaction each subject was asked not to discuss the procedures, the game, or the surveys with other students. All subjects verbally consented to confidentiality.

Testing for Self-Esteem. The next step was to collect data using the Coopersmith Self-Esteem Inventory (see Appendix B). After completing the video taped interaction, each student was given a pencil and the self-esteem inventory and then instructed to complete the inventory. For each statement the students were asked to indicate either "like me," if it described how they felt, or "unlike me," if the statement did not describe how they felt about themselves. After the student completed the self-esteem inventory, the self-esteem data was scored based on the procedures normed for the inventory.

Testing for Social Attractiveness. Each student was rated for social attractiveness. At the conclusion of each video taped interaction, the examiner rated the student on a seven point Likert-type scale (see Appendix C). The examiner had been instructed to rate each student on how enjoyable she perceived the interaction. A score of "1" indicated little enjoyment; a score of "4" average enjoyment; a score of "7" indicated a very enjoyable experience. Based upon this scale, a rating score of social attractiveness was assigned to each student.

Recording Achievement. Academic achievement data were taken from each subject's high school placement examinations. These academic data came from a battery of tests administered to all students upon entering Fremd High School. Four scores were provided. A global measure of scholastic abilities taken from the Otis-Lennon Mental Abilities Test was obtained. In addition, a measure of language mechanics was obtained from the California Achievement Test; reading comprehension scores were taken from the Gates-MacGinitie Reading Test; and math scores were obtained from a district generated norm-referenced test.

Achievement data were collected only after all other data had been collected and completely coded. This procedure prevented the experimenter from having any advanced knowledge of subjects, thus avoiding any potential bias.

#### Data Preparation and Analysis

This section begins with the description of the specific dependent measures that were collected and how they were prepared for analysis. Next, there is a description of the procedures used for training independent coders and an explanation of how they actually coded the video tapes. There is also a statement describing how inter-rater agreement was measured between the independent coders and the primary experimenter. This section concludes with a description of statistics used to analyze the data.

Behavioral Measures. Three types of measures served as dependent variables in this study. These are the same variables originally identified in Miller, et al. (1985). The first two measures are timings. These include the amount of time that the subjects engaged in smiling and gazing directed towards the examiner. Both smile and gaze were tabulated as separate dependent measures.

The third dependent measure is a comprehensive score designated as "Total." Coders counted and summed the discrete response behaviors used by subjects across all categories of responsive behaviors. This includes the total number of "yeses," "okays," "ohs," "uh-huhs," and nods that individual subjects engage in during the interaction with the examiner.

Total interaction time, while not a dependent variable, was also measured. Total interaction time was measured to provide rate-per-minute conversions for each of the three dependent variables.

Independent Observations. After all video-taped data were collected, the experimenter individually trained five independent observers for coding the experimenter-student interactions. Coders were told that they were measuring responsive listening skills. They were given descriptions of the specific listening behaviors from which they were to collect data, and then they were shown sample behaviors from video tapes, produced during the trial run.

Next, coders were given a blank data collection sheet (see Appendix F). Observers were then instructed to count specific back channel behaviors while viewing the video-taped interaction. Coders placed a mark on the appropriate line after observing each occurrence of the behavior. They were also given stop watches to measure timed variables. Coders were asked to record the amount of time subjects engaged in smiling and gazing.

After initial explanations the experimenter and coder observed a sample interaction selected from video tapes created during the trial-run. (The sample interaction was one not used for data collection.) During the sample viewing the experimenter pointed out instances where behaviors were being emitted and then demonstrated how to use the stop watches, record the responses and fill out the data collection sheet. The session concluded when the coder and experimenter agreed that he/she was skilled enough with the procedures to work independently in his/her home.

Using the VCR in their homes, coders measured the listening behaviors described. They counted the number of specific back channels behaviors (nods, "yeses," "okays," "ohs," and "uh-huhs") that subjects emitted during the video-taped interaction. At the end of the interaction coders summed the total number of such behaviors and put the sum in the spaces provided. This sum then became the raw data for the "Total" dependent measure.

Coders also viewed the tapes and measured for two other dependent measures, "Smile" and "Gaze." Coders were provided with Cronus digital stop watches. They timed the durations of smiling and gazing in which the subjects engaged and recorded the time on the blank data collection sheet provided.

Measures of Inter-Rater Agreement. In an effort to establish a measure of agreement between the primary investigator and the independent coders, 30% of the student-experimenter interactions coded by independent observers were also coded by the experimenter. Tapes observed by the experimenter were chosen at random and represented each of the five coders. During data analysis Pearson Product-Moment Correlation Coefficients were calculated between the ratings of responsive listening made by the independent coders and the ratings made by the primary investigator. These correlation coefficients are reported in Chapter V.

### Statistical Analysis

This section describes the statistical analysis conducted on the data. The first set of analyses investigates the relationship between age and gender with respect to the use of responsive listening skills. Next is the description of the analysis which investigates social attractiveness with respect to the use of responsive listening skills. Following this is an attempt to link academic achievement with responsive listening. Finally an

analysis, which investigates relationships between the use of responsive listening skills and self-esteem, is outlined.

Age, Gender, and Responsive Listening. It was predicted that there would be a relationship between age and gender with respect to the use of responsive listening skills. It was also predicted that there would be gender differences with respect to the type of responsive listening used by adolescents. In an effort to establish a relationship between age and gender and subject's use of responsive listening behaviors, students were divided into groups according to gender (male, female). Subjects were then reclassified by age (younger versus older) using median splits. These groups (male/female and younger/older) served as factors with the three dependent measures, Gaze, Smile and Total, in three separate two-way analysis of variance.

In order to establish whether there were mean differences between male and female students, and the respective use of listening skills, a t-statistic was used. Based upon gender, subjects were reclassified into two groups (male and female). Next, these two groups were compared by their mean usage of the given listening behaviors. It was predicted that females use more smile and eye-gaze, while males were predicted to use more head nods.

In order to establish whether there were mean differences between younger and older students, and their respective use of listening skills, a t-statistic was used.

Using median splits, subjects were reclassified into two groups (younger versus older). Next, these two groups were compared by their mean usage of the given listening behaviors.

Social Attractiveness and Responsive Listening. It was predicted that there would be relationships between gender, social attractiveness and the use of responsive listening skills. Students rated by the examiner as more socially attractive were predicted to use more responsive listening skills. First, an attempt was made to establish relationships between measures of social attractiveness and the use of responsive listening using Pearson Product-Moment Correlation Coefficients. Next, additional analyses were then conducted to further investigate these relationships.

In an effort to further investigate the relationship between social attractiveness and gender, with respect to students' use of responsive listening, subjects were classified, according to gender (male-female), and then further divided into groups (low, moderate, high attractiveness) according to the scores earned on the social attractiveness measure. Students earning between 1 and 3 on the social attractive measure were assigned to the group designated as "low" social attractiveness. Students who earned a score of 4 were assigned to the group designated "moderate" social attractiveness. Finally, students who

earned between 5 and 7 were assigned to the group designated "high" social attractiveness.

These groups (male/female and low/moderate/high social attractiveness) served as factors with the three dependent measures, Gaze, Smile and Total, in three separate analyses of variance.

A two-way ANOVA, with social attractiveness and gender serving as factors, was completed with the dependent variable Gaze. Separate two-way ANOVAS were then completed for the dependent variables Smile and Total. Finally, post-hoc tests using Tukey's HSD were conducted. This post-hoc test was conducted to see whether there might be any mean differences between the three groups. It was predicted that students rated as more socially attractive would use more responsive listening skills.

Academic Achievement and Responsive Listening. It was predicted that there would be a relationship between the use of responsive listening skills and academic achievement. Namely that students with higher achievement scores would engage in more responsive listening skills. Academic achievement was measured by the scores earned on four separate measures of achievement, including scholastic abilities, reading comprehension, language mechanics and mathematics. These scores were obtained from existing data found in the student files.



Pearson Product-Moment Correlations were calculated between academic achievement measures and each of the dependent variables, Gaze, Smile and Total. To further explore these relationships, additional analyses were conducted.

In an effort to further investigate relationships between these measures of achievement and listening, additional analyses were conducted. Subjects were reclassified by median splits into high and low achievement groups by the scores earned on the achievement tests. These scores were used as factors with the dependent measures, Gaze, Smile and Total, in a one-way analysis of variance. Separate analysis of variance procedures were conducted for each of the four measures of academic achievement. It was predicted that higher achieving students use more responsive listening skills.

Self-Esteem and Responsive Listening. It was predicted that there would be a relationship between self-esteem measures and the use of responsive listening skills. Students with higher self-esteem would also use more responsive listening skills. A self-esteem score from the Coopersmith SEI was assigned based on each adolescent's response to the 50 esteem items.

In an attempt to establish relationships between measure of self-esteem and the use of responsive listening, Pearson Product-Moment Correlation Coefficients were

conducted. To further evaluate the relationship between self-esteem and responsive listening skills, additional analyses were conducted.

In an effort to further investigate relationships between self-esteem and the use of responsive listening, students were reclassified into high and low self-esteem groups. Using the median score of 78, students whose scores fell below this cutoff were reclassified into the group, "lower" self-esteem. Students who earned the score 78 or above on the self-esteem measure were reclassified in the group, "higher" self-esteem. These groups served as factors with the dependent measures Gaze, Smile, and Total, in an analysis of variance. It was predicted that students with higher ratings of self-esteem use more responsive listening behaviors than students with lower ratings of self-esteem.

### Summary

This chapter began with a list of the research questions and predicted outcomes. These questions address the key issues of this study with regard to the use of responsive listening skills in adolescents. Several instruments were utilized to measure responsive listening skills, academic achievement, social attraction, and self-esteem.

A popular commercial board game was used to create an instructional situation which allowed responsive listening skills to naturally occur. Research (Hess and Johnson,

1988) has shown that a game situation, while highly motivating, is a situation which has a high demand for collaboration and is more likely to encourage listener feedback. Next, a special script of instructions was created during a trial run of procedures. This script allowed the instructions to be standardized and create approximately the same situation for each subject. A social attractiveness measure, updated from previous research (Lechner, 1991), was used to measure social attractiveness. The social attractiveness score was obtained by having the examiner rate each student on how she enjoyed working with that individual subject. A measure of self-esteem was obtained by the scores earned on the Coopersmith Self-Esteem Inventory. Research (Spatz and Johnson, 1973; Kimball, 1973) has shown that this inventory reliably describes factors seen as important to self-esteem.

Subjects in this study attended a northwestern suburban Chicago high school of middle socio-economic status. A total of 105 students, 37 males and 68 females, participated in this study. Because the overwhelming majority of the participants were Caucasian, race was not a factor in this research.

The students who participated ranged in age from 167 months (13-09 years) to 221 months (18-04 years) with a mean age of 189 months (15-07 years). Only those students whose

parents provided written permission were allowed to participate.

A conference room at the high school was prepared to provide a standardized testing environment where video taping took place. There was a large conference table and chairs in the room. The examiner's chair was directly across the table from the subject's chair. The game was already displayed on the table. A portable video cassette camera was placed to the left and slightly behind the examiner's chair. This arrangement allowed the examiner to make direct eye-contact with the student, while not obscuring the camera's view of the student's face.

The examiner had a graduate student assistant who served as an examiner during data collection only. The examiner was informed that the purpose of the research was to study responsive listening skills. In an effort to prevent experimenter bias, the suspected link between social attractiveness and responsive listening was not discussed with her. She was given a script of the interaction and a copy of the board game to study and to learn.

Subjects were provided with an opportunity to become familiarized with the examiner. Upon arrival in the testing room, on the day of experimentation, the students were given an opportunity to become comfortable and familiar with the settings. Subjects were introduced to the graduate student examiner, shown the video equipment, and asked if there were

any additional questions. The video-taped student-examiner interactions began when all questions were answered.

At the conclusion of the video-taped interaction, each student was told not to discuss the procedure, game, or survey until all data had been collected and all participants video-taped. Next, self-esteem inventories were completed. While these self-esteem inventories were being completed by the student, the examiner rated each student on the measure of social attractiveness. The final data collected were taken from student files. A global measure of academic achievement in reading comprehension, math, and language were obtained from student files.

Three types of measures served as dependent variables in this study. These are the same variables originally identified in Miller, et al. (1985) and in Lechner (1991). The first two measures are timings. These include the amount of time that the subjects engaged in smiling and gazing directed toward the experimenter. Both Smile and Gaze were tabulated as separate dependent measures.

The third dependent measure was a comprehensive measure designated as "Total." This measure included discrete response behaviors used by subjects across all categories including "yeses," "okays," "ohs," "uh huhs," and head nods that subjects engaged in during the interaction. Total interaction time was also measured to provide a rate-per-minute conversion for each of the three dependent variables.

After all video-taped data were collected, the experimenter individually trained five independent observers for coding the experimenter-student interactions. Using the VCR in their homes, coders measured the listening behaviors described. In an effort to establish a measure of agreement between the primary investigator and each of the independent coders, 30% of the student-experimenter interactions coded by independent observers were also coded by the experimenter. Tapes observed by the experimenter were chosen at random and represented each of the five coders.

Specific statistical procedures utilized to analyze these data were outlined. These procedures include analyses investigating relationships between responsive listening skills and age, gender, social attractiveness, academic achievement, and self-esteem of the subjects.

The next chapter, Chapter IV, begins with a review of the research questions, predictions, and dependent variables. Following this are detailed analyses of the results of this investigation.

## CHAPTER IV

### RESULTS

This chapter details the analyses and results of this investigation. This begins by presenting a review of the research questions, predictions, and dependent variables. Evidence which supports agreement between the primary investigator and independent coders is also presented. Next are analyses which investigate differences between age and gender with respect to the use of responsive listening skills. Following this are analyses linking use of responsive listening skills to social attraction. Finally, there is an attempt to link self-esteem and academic achievement with the use of responsive listening skills.

#### Research Questions and Predictions

The following questions address the main issues raised in this research:

1. Do older adolescents use more responsive listening behaviors than younger adolescents?
2. Are there gender differences with respect to the type and function of listener behaviors utilized?
3. Do higher achieving students use more responsive listening behaviors than lower achieving students?

4. As a group, do students rated as more socially attractive use more responsive listening behaviors?
5. As a group, do students with higher self-esteem use more responsive listening behaviors than students with lower ratings of self-esteem?

From these questions, the following predictions have been made:

1. As a group, older adolescents were predicted to use more responsive listening behaviors than younger adolescents.
2. It was predicted that there are gender differences with respect to the type of responsive listening behaviors used. Females were predicted to use more smiling and eye-gaze while males were predicted to use more non-verbal cues.
3. Higher achieving students use more responsive listening behaviors than lower achieving students.
4. Students rated as more socially attractive were predicted to use more responsive listening skills.
5. It was predicted that students with higher ratings of self-esteem use more responsive listening behaviors than students with lower ratings of self-esteem.

#### Dependent Variables

The dependent variables include the responsive listening skills outlined elsewhere in this paper. These responsive listening skills included both verbal and non-



verbal responses that were video recorded while adolescent subjects interacted with an adult. The verbal responses measured were the number of "yeses," "okays," "uh-huhs," and "ohs" emitted by subjects. The non-verbal responses coded were head nods, eye gazes, and smiles. From these data three types of measures were obtained, which then served as dependent variables in this study. The first two were timed measures. These included the amount of time that subjects engaged in smiling and the amount of time subjects engaged in gazing at the examiner. Both smile and gaze were tabulated as separate dependent measures. These timed measures were recorded in minutes and seconds. For the purpose of data analysis seconds were then converted into minutes using percentages. Total interaction time, while not a dependent variable, was also measured. Total interaction time was measured to provide a rate-per-minute conversion for each of the dependent variables listed above.

The third dependent measure was a comprehensive score designated as "Total." Coders counted and summed the discrete responsive behaviors used by the subjects across all categories of discrete responsive behaviors. These included the total "yeses," "okays," "ohs," "uh-huhs," and head nods that individual subjects engaged in during the interaction with the examiner.

### Agreement Between Coders

In an effort to establish a measure of agreement between the primary investigator and the independent coders, 30% of the video-taped student-examiner interactions, coded by independent observers, were also coded by the experimenter. Tapes, observed by the experimenter, were chosen at random and represented each of the five coders. Pearson Product-Moment Correlation Coefficients were then calculated between the ratings made by the independent coders and the ratings made by the primary investigator.

Results of the Pearson Product-Moment Correlation Coefficients indicate a strong relationship between the ratings tabulated by the independent coders and those measured by the experimenter. For the timed measure of Smile/Gaze, the mean correlation coefficient was .9254 (SD=.058) with an obtained range from .8530 to .9750. For the Total variable, the mean correlation coefficient between the experimenter and independent coders was .9738 (SD=.008) with an obtained range of .9664 to .9869. These results, displayed in Table 1, indicate that reliable measures were taken by the independent coders.

TABLE 1

Correlation Between Coders and Experimenter


---

		<u>Experimenter</u>	
<u>Coder</u>		<u>Total</u>	<u>Gaze/Smile</u>
	1	.9668*	.9750*
	2	.9735*	.9618*
	3	.9755*	.9673*
	4	.9644*	.8700*
	5	.9869*	.8530*

---

\*p&lt;.01

### Age, Gender and Responsive Listening

This section investigates relationships between students' gender and age with regard to their use of responsive listening skills. First, there is a description of the statistical procedures used to analyze the data. Next results of findings from the analyses are presented. Finally the section ends with a summary.

It was predicted that, as a group, older adolescents would use more responsive listening behaviors than younger adolescents. It was also predicted that there are gender differences with respect to the type of responsive listening behaviors used. Females were predicted to use more smiling and eye-gaze while males were predicted to use more head nods.

In an attempt to establish relationships between the age of subjects and their use of responsive listening, Pearson Product-Moment Correlation Coefficients were conducted. The correlation coefficients obtained between Gaze ( $r=.1894$ ) and Smile ( $r=.1183$ ) did not suggest a relationship. However, the correlation coefficients obtained for Total ( $r=.4414, p<.01$ ) suggested a significant relationship.

Because gender is a dichotomous variable, an Eta correlational statistic was necessary. The obtained correlation coefficient suggested a significant relationship between gender and Gaze ( $r=.28, p<.05$ ), gender and Smile

( $r=.23, p<.05$ ), but not for Total ( $r=.16, p>.05$ ). To further investigate these relationships, additional analyses were conducted.

In an effort to further investigate the relationship between age and gender, with respect to their use of responsive listening behaviors, students were divided into various groups. First subjects were identified according to gender (male and female). Next, subjects, using median splits, were also classified by age (younger versus older). The mean age of the younger group was 73.5 months (14-05 years) with an obtained range of 167 to 181 months ( $n=59$ ). The mean age of the older group was 209.1 months (17.5 years) with an obtained range of 191 to 221 months ( $n=46$ ).

These groups (male/female and younger/older) served as factors with the dependent measures, Gaze, Smile, and Total in three separate two-way analyses of variance (ANOVA). For purposes of organization, discussions about the dependent measure, Gaze, will be reviewed first. Next, Smile will be presented, followed by the results of the dependent variable Total.

Age, Gender and Gaze. A two-way ANOVA, with age and gender serving as factors, was completed with the dependent variable Gaze. No significant interaction was found ( $F(1,104)=.36, p>.05$ ). However, significant main effects were identified. A significant main effect was identified with respect to gender ( $F(1,104)=8.70, p<.05$ ) and a

significant main effect was identified with respect to age ( $F(1,104)=4.68, p<.05$ ). Table 2 details the results of this analysis. Following Table 2 is a discussion which explains the main effects.

TABLE 2

Analysis of Variance, Gaze by Gender and Age


---

Source of Variation	Sum of Squares	<u>DF</u>	Mean Square	<u>F</u>	Sig of <u>F</u>
<u>Main Effects</u>					
Gender	2.42	1	2.42	8.70	.004 .
Age	1.30	1	1.30	4.68	.033
<u>Interaction</u>					
Gender by Age	.10	1	.10	.36	.549
Explained	3.82	3			
Residual	28.04	101	.28		
Total	31.86	104			

---

## Means

## Male

Younger	.617
Older	.917

## Female

Younger	1.002
Older	1.172

The results of the ANOVA displayed in Table 2 indicate that a significant main effect was identified with respect to gender and age. In an effort to interpret these main effects, the means for each group (male/female and younger/older) were plotted in Figure 1.



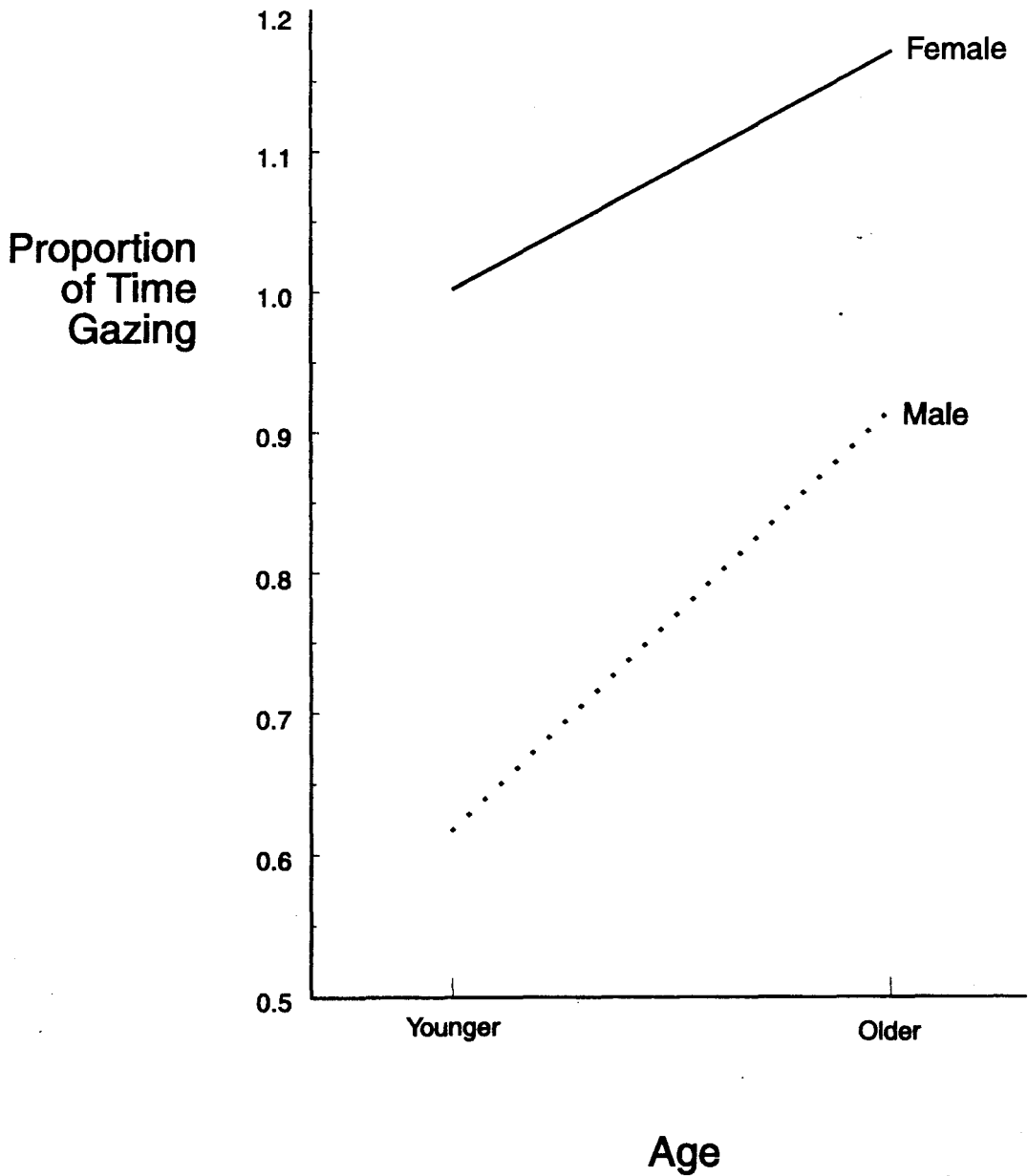
**Figure 1****Gaze in Relation to Age and Gender**

Figure 1 demonstrates that older adolescents ( $\underline{M}=1.0833$ ) used more gaze time, when interacting with an adult in a socially responsive setting, than younger adolescents ( $\underline{M}=.8650$ ). Figure 1 also illustrates that females ( $\underline{M}=1.077$ ) engaged in more gaze time than their male counterparts ( $\underline{M}=.7467$ ). Both of these findings are consistent with predictions.

Age, Gender and Smile. A two-way ANOVA, with age and gender serving as factors, was completed with the dependent variable Smile. No significant interaction was found ( $F(1,104)=1.30, p>.05$ ). However, a significant main effect was identified with respect to gender ( $F(1,104)=5.02, p<.05$ ). No significant between group variation was identified with respect to age ( $F(1,104)=1.47, p>.05$ ). Table 3 details the results of this analysis. Following Table 3 is a discussion which interprets the main effect.

TABLE 3

Analysis of Variance, Smile by Gender and Age


---

Source of Variation	Sum of Squares	<u>DF</u>	Mean Square	<u>F</u>	Sig of <u>F</u>
<u>Main Effects</u>					
Gender	.72	1	.72	5.02	.027
Age	.21	1	.21	1.47	.228
<u>Interaction</u>					
Gender by Age	.19	1	.19	1.30	.257
Explained	1.12	3			
Residual	14.40	101	.14		
Total	15.52	104			

---

## Means

## Male

Younger	.219
Older	.402

## Female

Younger	.482
Older	.488

The results of the ANOVA displayed in Table 3 indicate a significant main effect was identified with respect to gender but not with respect to age. In an effort to interpret these effects, the mean Smile time for each group (male/female and younger/older) was plotted in Figure 2.

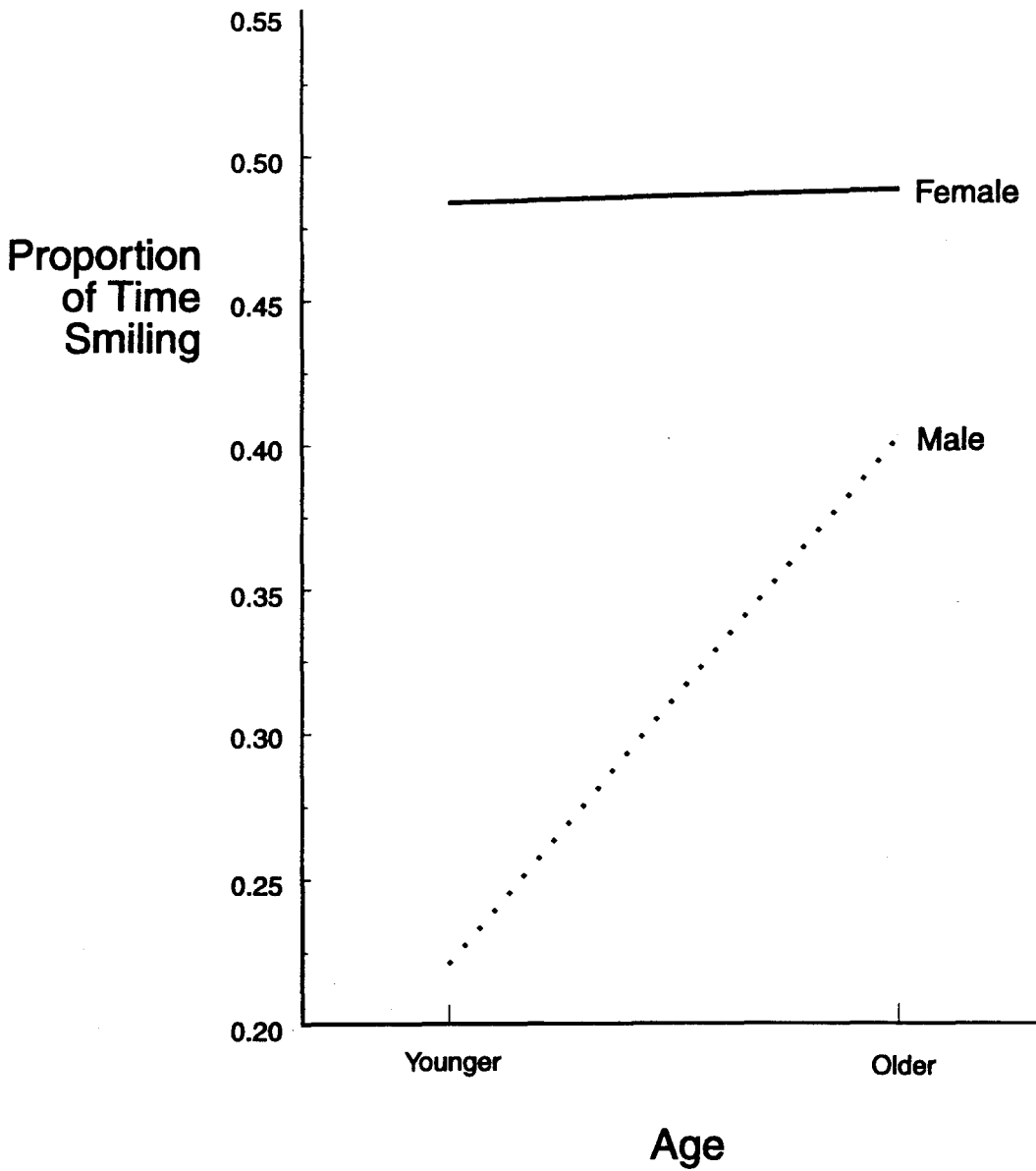
**Figure 2****Smile in Relation to Age and Gender**

Figure 2 demonstrates that consistent with predictions, there were significant gender differences with respect to the use of responsive listening skills. Females ( $\underline{M}=.4846$ ) engaged in more smile time than their male counterparts ( $\underline{M}=.2981$ ).

Age, Gender and Total. A two-way ANOVA, with age and gender serving as factors, was completed with the dependent variable Total. No significant interaction was found ( $F(1,104)=.00, p>.05$ ). However, a significant main effect was identified with respect to age ( $F(1,104)=26.44, p<.05$ ). While a non-significant finding was identified with respect to gender and use of the responsive listening variable Total ( $F(1,104)=3.41, p>.05$ ), the results approached significance. Table 4 details the results of this analysis. Following Table 4 is a discussion which interprets the main effects.

TABLE 4

Analysis of Variance, Total by Gender and Age

Source of Variation	Sum of Squares	<u>DF</u>	Mean Square	<u>F</u>	Sig of <u>F</u>
<u>Main Effects</u>					
Gender	25.95	1	25.95	3.41	.068
Age Group	201.32	1	201.32	26.44	.000
<u>Interaction</u>					
Gender by Age	.01	1	.01	.00	.967
Explained	227.28	3			
Residual	768.97	101	7.61		
Total	996.25	104			

Means

Male			Female	
Younger	5.560		Younger	6.586
Older	8.459		Older	9.532

Table 4 indicates that a significant main effect was identified with respect to age and non-significant finding was identified with respect to gender. In an effort to interpret these findings, the mean Total for each group (male/female and younger/older) was plotted in Figure 3.



**Figure 3**

Total in Relation to Age and Gender

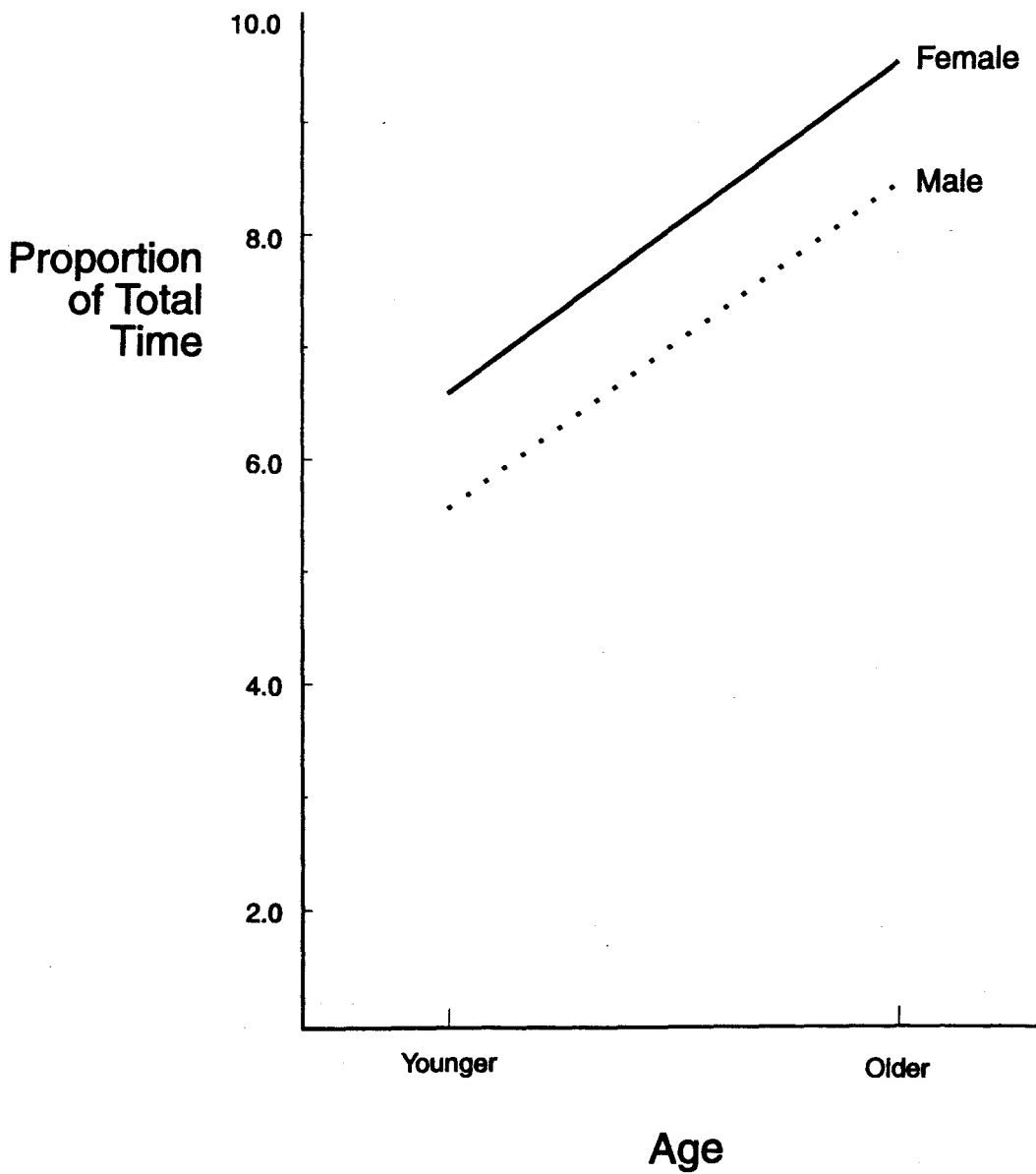


Figure 3 demonstrates that, consistent with predictions, older adolescents ( $\underline{M}=9.1587$ ) engaged in more Total responsive listening skills than younger adolescents ( $\underline{M}=6.220$ ).

Additionally, the results suggest a trend in which females ( $\underline{M}=7.885$ ) tended to use more Total responsive listening behavior skills than males ( $\underline{M}=6.813$ ). This would be consistent with predictions.

Gender Differences. In an effort to further investigate gender differences, with respect to the specific type of responsive listening skills used by subjects, a simple t-test was used. Subjects were divided into two groups according to gender (male/female). A t-test was then conducted for each of the discrete responses, "yeses," "okays," "uh huhs," "ohs," and "head nods." The results are displayed in Table 5.

TABLE 5

Responsive Listening and Gender t-tests

	Number of Cases	Mean	Standard Deviation	t Value	2-tail Prob.
Yeses					
Male	37	.0650	.116	-.30	.762
Female	68	.0752	.185		
Okay					
Male	37	1.7079	1.312	-2.19	.031
Female	68	2.3893	1.627		
Uh Huhs					
Male	37	.1399	.224	-2.51	.014
Female	68	.3900	.583		
Ohs					
Male	37	.0574	.150	-.98	.331
Female	68	.1175	.357		
Head Nods					
Male	37	3.9277	1.814	-.42	.673
Female	68	4.0833	1.793		

Consistent with predictions, the results indicated significant between group gender differences for the type of listener skills used. With respect to "okays," females ( $\underline{M}=2.38$ ) used significantly more "okays" than their male ( $\underline{M}=1.70$ ) counterparts ( $t=2.19, p<.05$ ). With respect to the number of "uh huhs," females ( $\underline{M}=.1399$ ) used significantly more "uh huhs" than their male ( $\underline{M}=.3900$ ) counterparts ( $t=2.51, p<.05$ ). Significant differences were not seen between groups for "yeses," "ohs," or "head nods."

Age Differences. In an effort to further investigate age differences with respect to the specific type of responsive listening skills used by the subjects, a simple t-test was used. Using median splits, subjects were divided into two groups according to age (younger versus older). A t-test was conducted to compare younger and older adolescents use of each of these discrete responsive listening behaviors, "yeses," "okays," "uh huhs," "ohs," and head nods. The results are displayed in Table 6.

TABLE 6

Responsive Listening and Age t-tests


---

	Number of Cases	Mean	Standard Deviation	t Value	2-tail Prob.
<b>Yeses</b>					
Younger	59	.0857	.195	1.00	.321
Older	46	.0536	.111		
<b>Okay</b>					
Younger	59	1.5603	1.248	-4.86	.000
Older	46	2.9046	1.587		
<b>Uh Huhs</b>					
Younger	59	.2826	.488	-.45	.657
Older	46	.3267	.520		
<b>Ohs</b>					
Younger	59	.0304	.096	-2.61	.010
Older	46	.1809	.430		
<b>Head Nods</b>					
Younger	59	3.6557	1.743	-2.47	.015
Older	46	4.5066	1.761		

---

These results, consistent with predictions, indicated significant between groups differences for the number of "okays," "ohs," and head nods employed by subjects. With respect to the number of "okays" used, older students ( $\underline{M}=2.9046$ ) used significantly more "okays" than their younger ( $\underline{M}=1.5603$ ) counterparts ( $t=-4.86, p<.05$ ). With respect to the number of "ohs" used, older students ( $\underline{M}=.1809$ ) emitted significantly more "ohs" than their younger ( $\underline{M}=.0304$ ) peers ( $t=-2.61, p<.05$ ). With respect to the number of head nods, older students ( $\underline{M}=4.5066$ ) provided significantly more head nods than their younger ( $\underline{M}=3.6557$ ) counterparts ( $t=-2.47, p<.05$ ). No significant differences were seen between groups with respect to the number of "yeses" or "uh huhs."

Summary. This section began with the presentation of the statistics used to analyze data in an effort to establish relationships between age, gender, and responsive listening skills. Next, relevant findings were presented. It was predicted that older adolescents use more responsive listening skills than younger adolescents. Gender differences were also produced with respect to subjects' use of responsive listening skills. Females were predicted to use more smiling and eye-gaze while males were predicted to use more non-verbal cues.

The results, as predicted, indicated significant relationships between age, gender, and subjects' use of

responsive listening skills. In all categories of responsive listening, females consistently used more backchannel listening behaviors than males. Females were identified to engage in more gazing and smiling. In addition, among some of the discrete listening behaviors that comprise the Total dependent measure, females also used more of these behaviors than males. Females used more "okays" and "uh huhs" than males.

Significant findings were also found with respect to age of subjects. Consistently, older students used more responsive listening skills than younger peers when interacting with an adult. Older subjects used more gaze; and among the behaviors that comprise the Total variable, older subjects use more "okays," "ohs," and head nods. While significant differences were not noted with regard to subjects' use of smiling, the data suggest a trend, especially when looking at males.

The next section investigates social attractiveness. Relationships between subjects use of responsive listening skills and ratings of social attraction are explored.

#### Social Attractiveness and Responsive Listening

This section investigates relationships between social attractiveness and subjects use of responsive listening skills. It was predicted that students rated as more socially attractive use more responsive listening skills than students rated as less socially attractive. To begin

this analysis, Pearson Product-Moment Correlation Coefficients were conducted. Next analyses of variance and post-hoc measures were also conducted. Finally, a summary outlining relationships between social attractiveness and students use of responsive listening is provided.

Social attractiveness was measured utilizing a seven point Likert-type scale. The examiner rated students' social attractiveness utilizing this scale. The examiner assigned a score to each student. A mean score of 4.2 (SD=1.2) was obtained with scores ranging from 1.0 to 7.0.

The first step in establishing relationships, between measures of social attractiveness and the use of responsive listening, involved the use of Pearson Product-Moment Correlation Coefficients. The correlation coefficients obtained between measures of social attractiveness and responsive listening skills suggest a significant relationship. The correlation coefficient for Gaze was .2738 ( $p < .05$ ); the correlation for Smile was .2068 ( $p < .05$ ); and the correlation for Total was .4267 ( $p < .05$ ). Additional analysis were then conducted to further investigate the nature of these relationships.

In an effort to further explore the relationships between social attractiveness and gender, with respect to subjects' use of responsive listening skills, subjects were classified, according to gender (male-female) and then further divided into groups (low, moderate, high



attractiveness) according to the scores earned on the social attractiveness measure. Students scoring between 1 and 3 on the social attractiveness measure were assigned to the group designated as "low" social attractiveness (female  $n=15$ ; male  $n=11$ ). Students who earned a score of 4 were assigned to the group designated "moderate" social attractiveness (female  $n=24$ ; male  $n=16$ ). Finally, students who earned between 5 and 7 were assigned to the group designated "high" social attractiveness (female  $n=29$ ; male  $n=10$ ).

These groups (male/female and low/moderate/high social attractiveness) served as two factors with the three dependent measures, Gaze, Smile, and Total, in three separate analyses of variance. For purposes of organization, results concerning the variable Gaze will be discussed first. Following this will be the results of Smile. Finally, the results of Total will be discussed.

Social Attraction and Gaze. A two-way ANOVA, with social attractiveness and gender serving as factors, was completed with the dependent variable Gaze. No significant interaction was found between social attraction and gender with respect to the use of gaze ( $F(2,104)=.33, p>.05$ ). However, a significant main effect was identified with respect to social attraction and gaze ( $F(2,104)=4.55, p<.05$ ) and gender and gaze ( $F(2,104)=7.41, p<.05$ ). These results are displayed in Table 7.

TABLE 7

Analysis of Variance, Gaze by Social Attraction and Gender


---

Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
<u>Main Effects</u>					
Attraction	2.43	2	1.22	4.55	.013
Gender	1.98	1	1.98	7.41	.008
<u>Interaction</u>					
Attraction by Gender	.18	2	.09	.33	.717
Explained	4.59	5			
Residual	26.48	99	.27		
Total	31.07	104			

---

## Means

## Male

Low .662  
 Mid .635  
 High 1.017

## Female

Low 1.089  
 Mid .868  
 High 1.244

The results of the ANOVA indicated a significant main effect with respect to social attraction and responsive listening measure of Gaze. Post-hoc tests using Tukey's HSD ( $\alpha=.05$ ;  $df60$ ) were conducted to see whether there might be any mean differences between the three groups (low, moderate, high social attraction). The results of the Tukey's HSD indicated no significant difference between the means of the three groups. The mean of the group rated lowest in social attraction ( $\bar{M}=.908$ ) did not differ from the mean of the group rated moderately socially attractive ( $\bar{M}=.7748$ ). The mean of these groups did not differ from the mean of the group rated highest ( $\bar{M}=1.185$ ) in social attraction. These findings were contrary to predictions. Next are the results of the ANOVA conducted with the dependent variable Smile.

Social Attraction and Smile. A two-way ANOVA, with social attractiveness and gender serving as factors, was completed with the dependent variable Smile. No significant interaction was found between social attractiveness and gender with respect to the use of Smile ( $F(2,104)=.59, p>.05$ ). No significant main effect was found with respect to social attractiveness and the use of Smile ( $F(2,104)=1.23, p>.05$ ). A significant main effect was found with respect to gender and Smile ( $F(2,104)=5.21, p<.05$ ). These results, displayed in Table 8, were contrary to

predictions. Next, the results of the ANOVA with the dependent variable Total are discussed.

TABLE 8

Analysis of Variance, Smile by Social Attraction and Gender


---

Source of Variation	Sum of Squares	<u>DF</u>	Mean Square	<u>F</u>	Sig of <u>F</u>
<u>Main Effects</u>					
Attraction	.35	2	.18	1.23	.296
Gender	.75	1	.75	5.21	.025
<u>Interaction</u>					
Attraction by Gender	.17	2	.08	.59	.556
Explained	1.27	5			
Residual	14.18	99	.14		
Total	15.45	104			

---

Mean			
Male		Female	
Low	.164	Low	.466
Mid	.328	Mid	.422
High	.398	High	.546

Social Attraction and Total. A two-way ANOVA, with social attractiveness and gender serving as factors, was completed with the dependent variable Total. No significant interaction was found ( $F(2,104)=.68, p>.05$ ) nor was there a significant main effect for gender and Total ( $F(2,104)=1.61, p>.05$ ). However, significant main effect was identified with respect to social attractiveness and Total ( $F(2,104)=13.88, p<.05$ ). These results are displayed in Table 9. Following Table 9 is a discussion which interprets the main effect.

TABLE 9

Analysis of Variance, Total by Social Attraction and Gender


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Source of Variation	Sum of Squares	DF	Mean Square	F	Sig of F
<u>Main Effects</u>					
Attraction	216.58	2	108.29	13.88	.000
Gender	12.54	1	12.54	1.61	.208
<u>Interaction</u>					
Attraction by Gender	10.61	2	5.30	.68	.509
Explained	239.73	5			
Residual	772.28	99	7.80		
Total	1012.01	104			

---

## Means

## Male

Low 4.202  
Mid 7.234  
High 9.014

## Female

Low 5.830  
Mid 7.966  
High 8.883

The results of the ANOVA displayed in Table 9 indicated a significant main effect with respect to social attractiveness and subjects' use of discrete responsive listening skills in the dependent variable Total. Post-hoc tests using Tukey's HSD ( $\alpha=.05, df60$ ) were conducted to see whether there might be significant mean differences between the groups rated low, moderate, and high on the social attractiveness measure. Results indicated significant differences between groups.

Both the group rated as moderately socially attractive ( $\bar{M}=7.67$ ) and the group rated highest in social attraction ( $\bar{M}=8.91$ ) used significantly more responsive listening skills than the group rated lowest in social attraction ( $\bar{M}=5.14$ ). These results indicate that as ratings of social attraction increase, more responsive listening skills are used. These results are consistent with predictions.

Summary. This section reported the results which established relationships between social attractiveness and subjects use of responsive listening skills. It was predicted that students rated as more socially attractive use more responsive listening skills than students rated as less socially attractive.

Consistent with predictions, students rated as more socially attractive used more of the discrete Total responsive listening skills which comprise the Total



variable. However, contrary to predictions, no significant differences were seen with respect to Gaze or Smile.

#### Academic Achievement and Responsive Listening

This section reports efforts to establish a relationship between measures of academic achievement and subjects use of responsive listening skills. The first step was to conduct Pearson Product-Moment Correlation Coefficients. Results from analyses of variance are reported. Finally, a summary outlining the relationships between academic achievement and responsive listening is provided.

Four measures of academic achievement were used in this study. The Otis-Lennon Mental Abilities Test was used as a global measure of scholastic abilities, and more specific academic measures in reading, math, and language were also taken from standardized scores found in student files.

Correlation Coefficients. As a first step in establishing a relationship between academic achievement and the use of responsive listening behaviors, Pearson Product-Moment Correlations were calculated between each measure of academic achievement (scholastic abilities, reading, math, and language) and each of the dependent measures, Gaze, Smile, and Total. Contrary to predictions, no significant relationships were identified between academic achievement and any of the dependent measures (see Table 10).

TABLE 10

Correlations Between Achievement and Dependent Measures


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<u>Academic Measure</u>	<u>Behavioral Measure</u>		
	Gaze	Smile	Total
Scholastic Abilities	.1351	.1331	.0851
Reading	-.0010	-.0273	-.0386
Language Mechanics	.0901	.0433	-.0069
Mathematics	.0918	.1059	.1165

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\*p&lt;.05

\*\*p&lt;.01

Scholastic Abilities and Responsive Listening. While correlation coefficients did not suggest a significant relationship between scholastic abilities and listening, additional analyses were conducted to further investigate a possibility that such relationships might exist. In an effort to establish this relationship, subjects were reclassified by median splits into high and low achieving groups by the scores earned on the scholastic abilities measure. These two groups were used as factors with the dependent measures, Gaze, Smile, and Total in three one-way analyses of variance (see Appendix K).

Contrary to predictions, no significant differences were seen between subjects' scholastic abilities and use of responsive listening skills. Differences were not seen for Gaze ( $F(1,103)=.41, p>.05$ ), nor for Smile ( $F(1,103)=2.60, p>.05$ ), nor for Total ( $F(1,103)=.83, p>.05$ ). Next, is an investigation between more specific academic measures (reading, mathematics, language) and subjects' use of responsive listening skills.

Reading and Responsive Listening. While correlation coefficients did not suggest a significant relationship between reading and responsive listening, additional analyses were conducted to further investigate a possibility that such relationships might exist.

In an effort to further investigate a relationship between reading achievement and responsive listening,

subjects were reclassified by median splits into high and low achieving groups, based on their scores from a reading comprehension test. These groups were used then as factors with the dependent measures, Gaze, Smile, and Total in three one-way analyses of variance (see Appendix F).

Contrary to predictions, no significant differences were seen between students rated low and high on reading achievement with respect to the use of responsive listening skills. Differences were not seen for Gaze ( $F(1,103)=.70, p>.05$ ), nor for Smile ( $F(1,103)=.72, p>.05$ ), nor for Total ( $F(1,103)=1.25, p>.05$ ).

Math and Responsive Listening. While correlation coefficients did not suggest a significant relationship between math scores and responsive listening, additional analyses were conducted to further investigate a possibility that such relationships might exist.

In an effort to further investigate a relationship between math achievement and responsive listening, the subjects were reclassified by median splits into high and low achieving groups based on their scores earned on a math test. These groups were used as factors with a dependent measures, Gaze, Smile, and Total responsive listening variables in three one-way analyses of variance (see Appendix G).

Contrary to predictions, no significant differences were seen between students rated low and high on math

achievement with respect to the use of responsive listening skills. Differences were not seen for Gaze ( $F(1,103)=.03, p>.05$ ), nor for Smile ( $F(1,103)=1.32, p>.05$ ), nor for Total ( $F(1,103)=1.79, p>.05$ ).

Language and Responsive Listening. While correlation coefficients did not suggest a significant relationship between language achievement scores and responsive listening, additional analyses were conducted to further investigate a possibility that such relationships might exist.

In an effort to further investigate a relationship between language scores and responsive listening, subjects were reclassified by median splits into low and high achievement groups based on their scores earned on a language test. These groups were used as factors with the dependent measures, Gaze, Smile, and Total responsive listening behaviors in three one-way analyses of variance (see Appendix H).

Contrary to predictions, no significant differences were seen between students rated low and high when investigating language achievement with respect to the use of responsive listening skills. Differences were not seen for Gaze ( $F(1,103)=.05, p>.05$ ), nor for Smile ( $F(1,103)=.17, p>.05$ ), nor for Total ( $F(1,103)=.04, p>.05$ ).

Summary. This section reported efforts to establish relationships between measures of academic achievement with

respect to subjects' use of responsive listening skills. It was predicted that higher achieving adolescents would use more responsive listening skills.

Four measures of academic achievement were used. A global measure of aptitude was used along with three more specific measures. Contrary to predictions, no relationships were found. Students rated as higher achieving did not differ from students rated as lower achieving with respect to their use of responsive listening skills.

The next section investigates relationships between self-esteem and responsive listening skills.

#### Self-Esteem and Responsive Listening Skills

This section investigates relationships between students' self-esteem scores and their use of responsive listening skills. It was predicted that students with higher ratings of self-esteem would also use more responsive listening skills. To begin this analysis, Pearson Product-Moment Correlation Coefficients were conducted. Next, results using analysis of variance are reviewed. Finally, a summary outlining relationships between self-esteem and responsive is provided.

The Coopersmith Self-Esteem Inventory (Coopersmith, 1981) was used to measure self-esteem. The self-esteem score was assigned based on each adolescent's response to

the 50 esteem items. The mean self-esteem score was 75.5 with students' scores ranging from 34 to 100.

In an attempt to establish relationships between self-esteem and the use of responsive listening, Pearson Product-Moment Correlation Coefficients were conducted. The correlation coefficients obtained between measures of self-esteem and responsive listening skills did not suggest a significant relationship (Gaze  $r=.1526$  Smile  $r=.0358$ ; Total  $r=.0374$ ;  $p>.05$ ).

While these correlation coefficients did not suggest a significant relationship, additional analysis were conducted to further investigate the possibility that a relationship might exist. To conduct this analysis, students were reclassified, using median splits, into 2 groups. Students scoring below the median score (78) were classified as having lower self-esteem ( $n=47$ ). Students scoring above the median score were classified as having higher self-esteem ( $n=58$ ). These groups served as factors with the dependent measures, Gaze, Smile, and Total in three analyses of variance.

Contrary to predictions, the results (see Appendix L) indicated no significant differences between the measure of self-esteem with respect to subjects' use of responsive listening skills. Differences were not seen for Gaze ( $F(1,104)=1.58, p>.05$ ), nor for Smile ( $F(1,104)=1.04, p>.05$ ), nor for Total ( $F(1,104)=.01, p>.05$ ).

### Chapter Summary

This chapter began with the research questions followed by predictions. Next, was a description of dependent variables. Finally, the analyses and results were presented. These results are outlined below.

The first results supported agreement between the ratings made by the individual coders and the primary investigator. Next, analyses which investigated age and gender differences with respect to the use of responsive listening skills were reported.

Supporting predictions, significant relationships between age, gender, and subjects' use of responsive listening skills were seen. In all categories of responsive listening, females consistently used more backchannel listening behaviors than males. Females were identified to engage in more gazing and smiling. In addition, among some of the discrete listening behaviors that comprise the Total dependent measure, females also used more of these behaviors than males. Females used more "okays" and "uh huhs" than males.

Significant findings were also found with respect to age of subjects. Consistently, older students used more responsive listening skills than younger peers when interacting with an adult. Older subjects used more gaze, and among the behaviors that comprise the Total variable, older subjects use more "okays," "ohs," and head nods.



While significant differences were not noted with regard to subjects' use of smiling, the data suggest a trend especially when looking at males.

Results also indicated relationships between ratings of social attraction and use of responsive listening skills. Supporting predictions, subjects scoring high on social attractiveness measures were also observed to use more Total responsive listening behaviors.

Attempts to establish relationships between academic achievement and responsive listening were presented. Contrary to predictions, no links between academic achievement and the use of responsive listening were found.

Attempts to establish relationships between self-esteem and responsive listening were presented. Contrary to predictions, no links between self-esteem and the use of responsive listening were found.

Finally, many interesting results were obtained by these analyses. These findings appear to support the efficacy of this line of research. Chapter V details the importance of these findings.

## CHAPTER V

### DISCUSSION

This chapter opens with a discussion of the technical strengths of this research, which establish a methodology for investigating responsive listening skills. Next, is a brief review of key research. This review helps put the current findings into a larger developmental perspective. Following this is an in depth discussion of the results of the present study. Insights are provided into the significance of age differences, gender differences, and into the importance of social attractiveness with respect to responsive listening skills. There is also a discussion which questions the importance of self-esteem and academic achievement in this line of research. Finally, a chapter summary is provided along with implications for future research.

#### Technical Strengths

Before reviewing the findings of this research, a review of the technical strengths of this study is in order. The commercial board game succeeded in creating an environment conducive for observing responsive listening skills. This was evidenced in that every subject responded responsively, when interacting with the boardgame, during

the video-taped interactions with an adult. In fact, there was a high rate of responsiveness. The mean number of discrete responsive behaviors was 38.8. This number of responses was elicited in a relatively brief interaction time (average time of interaction = 5.2 minutes). This high rate of responsiveness supports contentions that the methodology used in this study was a good mechanism for eliciting responsive listening skills in adolescents.

There were several other benefits for using the game paradigm as a mechanism for eliciting responsive listening skills. First, the game situation allowed a controlled, but similar, experience for all subjects. Secondly, it was a situation which demanded collaboration, hence it was more likely to encourage listener feedback. Thirdly, games are seen as intrinsically motivating to children, thus increasing the likelihood of responding.

The game paradigm, as first introduced by Hess and Johnson (1988), is a good mechanism for creating an environment conducive to eliciting responsive listening skills. The high rate of responsiveness seen in the present study supports and replicates the findings of previous research.

Additional evidence supporting the technical strengths of this study was the measure of agreement between the primary investigator and the independent coders. As reported in Chapter IV, it is apparent that independent

coders were reliably tabulating listening skills from the video tapes. The correlation coefficients were high with an obtained range from .8530 to .9869. Similar high correlations were obtained in previous research which used the same video-recorded technique (Miller et al., 1985; Lechner, 1986; Lechner, 1991). These data continue to support that this video-recorded technique is a reliable way in which to collect and measure data.

As a form of validity, the methodology used in this research on adolescents continues to replicate findings of prior research (Miller et al., 1985; Lechner, 1986; Hess and Johnson, 1988; Lechner, 1991). The use of backchannels in a socially responsive way has been well documented in previous research on adults and young children. It is now apparent that this paradigm also can be used to measure responsive listening skills among adolescents. As was seen in Chapter IV, the results of this study now clearly indicate that adolescents also have been observed to use back-channels responsively.

Replication in the present study, of age and gender differences among adolescents' use of responsive listening skills, also serves as a form of validation. Age and gender differences identified in previous research also were documented presently. More details of these replications will be discussed later in this chapter. Clearly, the methodology used in the present study succeeded in not only

replicating previous research, but also has provided knowledge about the use of responsive listening skills in adolescent populations, where none previously existed.

This study is an important first step in understanding the development and use of responsive listening skills in adolescents. Because the earliest research studies on responsive listening behaviors investigated adults, we have a well developed picture of adult listening performance in a conversational setting. More recently, a second body of research has recently focused on the development of young children's listener roles. However, to date, no research has focused on an adolescent population.

#### Developmental Perspective

Prior to a discussion on developmental perspective of responsive listening skills, a brief review of key research is necessary. This section opens as responsive listening skills are described. Next is a review of the many individual differences that have been identified among adult populations. Following this is a review of studies which address children's acquisition of these important skills. Finally, a discussion of how this research fits into a larger developmental perspective is provided.

As has been well documented throughout this paper, responsive listening skills include verbal responses, such as "yes," "okay," "uh huh," and "oh," and non-verbal responses, such as gazing, smiling, and nodding. All of

these responses are known as backchannel responses (Yngve, 1970; Duncan, 1975; Duncan et al., 1977). Backchannel behaviors are social behaviors which facilitate conversations by acknowledging that one is listening to, attentive to, interested in, and understanding of the concern of another (Miller et al., 1983; Miller et al., 1985; Hess and Johnson, 1988).

The earliest research documented individual differences among adults use of backchannel listening behaviors. These responsive behaviors have been shown to play an important role in social interactions. Responsive listening behaviors, both verbal and non-verbal, have been linked to conversation maintenance (Duncan, 1972); social attraction and liking (Rosenfeldt, 1966); mutual interest and attention (Davis and Perkowitz, 1979); intimacy of friendships and ability to elicit self-disclosure (Miller et al., 1983; Purvis et al., 1984); and perceptions of trustworthiness and confidence (Uhleman and Lee, 1990). These studies have shown that adults are consciously aware of backchannel listener behaviors and use them differently to obtain desired results. An interesting question then is how these behaviors actually develop. The focus of the next section is to review how these skills are acquired in children, then develop and differentiate with age.

Responsive listening behaviors have been documented as early as infancy (Wolff, 1963; Argyle and Cook, 1976; Sroufe

and Waters, 1976). However, at this early age the research indicates that infants use responsive behaviors in a reflexive manner without purposeful intent (Als, 1977; White, 1975; Wolff, 1963). In infancy, these reflexes are most likely adaptive, in that they are used to gain attention for the infant and also serve to maintain general social interaction. Because we know that responsive behaviors are present since infancy, the developmental issue then becomes not when backchannels first appear, but rather how these responsive listening behaviors change in form and function and how the repertoire of these responsive behaviors is expanded over developmental time.

Recent research (Miller et al., 1985; Lechner, 1986; Hess and Johnson, 1988; Lechner, 1991) has focused on these developmental issues. Miller et al. (1985) demonstrated that children, as young as two years of age, were capable of producing messages that show the speaker's message had been received. These children have been shown to listen with intent and purpose. Moreover, with increasing age, children use more responsive listening behaviors. Older preschool children used more head nods, spent more time talking, smiling, and gazing in adult-children interactions.

Extending the research of Miller et al. (1985) into early childhood, Hess and Johnson (1988) observed and recorded the frequency of responsive listening skills of older children (seven through 12 years of age). They found

that the frequency of backchannel responses continued to increase significantly with age. In fact, there was a three-fold increase in the frequency of backchannel responses between the years of seven and eleven. These results suggest that school-age children are learning to provide more feedback to the listener. They are learning to move beyond mere message comprehension. While this study did not investigate social attractiveness, this study did document the emergence of children learning to actually facilitate conversations.

Related research (Hazen et al., 1989; Rubin, 1977; Groltman et al., 1975) noted that children with better developed overall communication skills are better liked than peers with poorer communication skills. While the communication skills investigated in these studies were not backchannel behaviors, these findings suggested a link between responsive listening skills and social attraction. Researchers wondered if there might be links between social attraction and popularity with respect to children's use of responsive listening skills.

The first attempt to establish a relationship between social attraction and listening in a preschool population was done by Lechner (1986). While there was a clear replication of developmental findings first identified in Miller et al. (1985), no links were found between social attraction and responsive listening among preschoolers.



Since this relationship had already been established in adults (Miller et al., 1985), more study was needed.

In an extension of his earlier study, Lechner (1991) again studied responsive listening behaviors in relationship to social attraction. Postulating that social attractiveness may not be an important factor in preschoolers' use of responsive listening skills, Lechner (1991) extended research into school-aged populations. This study again replicated the conversational technique as a method for investigating listening skills. However, for the first time, important individual differences were also observed among school-aged children.

This study identified relationships between the age and gender of the subject with respect to the use of responsive listening skills. Consistent with literature on preschoolers, this research found that older subjects tended to engage in more responsive listening skills than younger subjects.

In addition, gender differences also, for the first time, were established among children. It was apparent that as early as six years of age sex differences were beginning to emerge. Female students tended to use more smiling and gazing than their male counterparts.

Lechner's research also identified links, for the first time among children, between the use of responsive listening skills and social attraction. The results indicated that

some boys who were rated as more socially attractive, tended to engage in more socially responsive smiling. It appears that among school-aged children the importance of social attraction with respect to responsive listening skills is only beginning to emerge.

All of these studies have shown that young children are capable of producing messages which show that the speaker's message has been received. We have seen that throughout early to middle school-age years the frequency of backchannel behaviors continues to increase. Most importantly, we have seen that not only do these skills begin to differentiate with age, but gender differences emerge and social attraction becomes an important variable. What is apparent is the lack of research with respect to adolescent subjects' use of these listening skills. Much is known regarding adult and children's use of these skills. However, adolescent populations have not been studied. The present research is a first step in addressing this key age group.

The present study was designed to link the literature on conversational backchannels from the adult research with studies on preschool and early elementary school aged children. That is, this research was intended to further explore developing relationships between age, gender, social attraction, and academic achievement, with the use of responsive listening skills. In addition, a new variable

was added to this research. A relationship was investigated between self-esteem and responsive listening skills.

Because earlier studies linked better developed communication skills with popularity and liking, it was wondered whether higher levels of self-esteem might be related to use of responsive listening skills. In the sections that follow, there will be a discussion of the results from this study.

### Gender Differences

It was predicted that gender differences, with regard to subjects' use of responsive listening skills, would continue to differentiate into adolescence. It was felt that adolescents would approximate gender differences seen among adults. Females were predicted to use more smiling and gazing than their male counterparts.

Gender differences have been investigated in previous research. Lechner (1986) found that sex differences, with regard to responsive listening, emerged among children as early as six years of age. Research (Lechner, 1991) with school-aged children (six to ten years of age) found that females tended to engage in more gazing than their male counterparts, but there was no significant evidence suggesting that females use smile more than males, nor did females use more of the discrete responsive behaviors which comprise the Total variable. Research with adults (Hall and Halberstadt, 1986) found evidence that adult females smile

and gaze more than adult males. Based on these data, it was predicted that subjects in this study would closely more approximate findings found in the adult literature.

Consistent with predictions, the findings of the present research suggested that females engaged in more smiling and gazing than their male counterparts. Not only do females use more gazing and smiling, they also tended to use more "okays" and "uh huhs," which are behaviors that comprise the Total dependent measure. Clearly, female adolescents demonstrate responsive listening skills that match research with adults. Female adolescents appear to have fully developed these skills. However, this may not be the case for males.

For males, it was predicted that they would engage in more nonverbal responsive listening behaviors than females. However, in this study, contrary to predictions, there was no significant between group differences for head nods. Females ( $\bar{M}=4.0$ ) seemed to utilize head nods with similar frequency than male ( $\bar{M}=3.9$ ) counterparts. It may be that adolescent males have yet to develop the nonverbal skills that approach the gender differences seen among adult males.

What is apparent is that females may be developing listening skills at a faster rate than males. Additional evidence that females develop responsive listening skills which approximate adults sooner than males is presented

next. To facilitate discussion, the reader is referred to Figure 2 on page 73.

Interestingly, the plot of the means on page 73 illustrated a ceiling effect for the amount of smiling that females engage in this study. The results suggested that there is no significant change between the amount of smiling that young females engaged in as compared to older females. The rate of smiling is very different for males. Smiling is seen to increase across time. The rate of smiling increased greatly from the 14-year old group to the 18-year old group.

These results suggest that males may have a different time table for the development of smiling as a responsive listening skill. Smiling is seen to increase for males during adolescence, while remaining basically constant for females. By age 14, females may have reached a ceiling and may be using smile as adult females do.

A picture appears to be emerging which links gender differences, in the use and development of responsive listening skills, between children and adults. This trend, that females use more smile and gazing than males, has been documented among adults, children, and now evidence is provided that this trend continues into adolescence. Also, while consistent gender differences emerge in childhood and are established in adulthood, it may be premature to conclude that these differences actually remain stable into

adulthood. This study on adolescents points to additional issues that need consideration.

This study indicates that, for males, the use of the responsive listening skill Smile continues to develop into young adulthood. While a ceiling may have been seen for females, one was not identified for males. Also most, if not all, of the adult literature on responsive listening skills has been conducted with college freshmen serving as subjects. Many college freshmen are about 18 years of age. In the present research, the mean age of the older group of subjects was 17-05. Since this group is close in age to the "average" college freshman, one would expect similar results with respect to gender differences. Can we really consider the "adult" literature representative of adult behavior? Can we conclude that gender differences remain constant across the developmental lifespan? Do males and females continue to differ in the amount of responsive listening skills well into adulthood? Clearly, the present study indicates that we do not have enough data at the present time to support these conclusions. It remains the task of future research to clarify the question of gender differences for adult populations.

#### Age Differences

At the onset of this study it was predicted that there would be age differences with respect to the use of responsive listening skills. It was predicted that older

adolescents would use more responsive listening skills than their younger peers. Research (Hess and Johnson, 1988; Lechner, 1991) has shown that, as children mature, they engage in more responsive listening skills.

Hess and Johnson (1988) were the first to clearly demonstrate this trend. That research team found that responsive listening skills significantly increased during childhood. In fact, a three-fold increase was seen in the amount of responsive listening between the ages of seven and twelve years of age. While the present research did not find results as dramatic as the Hess and Johnson study, the present research found evidence that development continues well into the high school years. Older subjects have been seen to use more responsive listening skills than younger subjects. Findings not only replicated results of previous investigations, present research extended findings into a previously unresearched age group.

The findings of this study are consistent with predictions. Older adolescents engaged in more gazing and used more behaviors that comprise the Total responsive listening variable than their younger counterparts.

As previously noted in the section discussing gender differences, similar questions remain with regard to age differences. It is wondered if these differences continue into adulthood. That is, do middle-aged adults use more responsive listening skills than younger aged adults? Or,

is there an age at which these skills "peak?" Are other factors operating? Are socio-economic status or level of education important variables?

### Discussion of Discrete Responses

As noted in Chapter IV, there were sex and age differences seen with respect to subjects' use of the discrete responsive listening behaviors. Older subjects used more "okays," "ohs," and head nods than their younger counterparts. Female subjects used more "okays" and "uh huhs" than their male counterparts. Examining these discrete responses may be interesting, but this micro-analysis may not be the best way of analyzing these data. It may be more advantageous to examine the aggregate responses, Gaze, Smile, and Total, in future analyses.

There are several reasons for using Total variable, rather than investigating the discrete responses that comprise Total, as a method of analysis. First, it may be difficult to make accurate comparisons of the discrete responses as they are used by subjects over developmental time. Certain responses, such as "yes," may have very different meanings across age and level of experience in education. For instance, a first-grader interacting with an adult (authority figure), serving in the role of an examiner, may respond with more listening behaviors (such as gazing and "yeses") which indicate passivity or compliance. On the other hand a high school senior, interacting with a



23 year-old graduate student, may not view this examiner as an adult authority figure. The examiner may be viewed as a peer. These interactions may not be characterized by the passivity and compliance seen with a first grader. Rather, listening behaviors may reflect engagement and facilitation, which include listening cues such as "okay," "oh," "uh huh," smiling and head nodding.

Secondly, the nature of the subject-examiner interaction was different in important ways. The nature of the social interaction in the present study was similar to the interaction in the Hess and Johnson study (1988). The present study, as well as Hess and Johnson used a commercial board game as a mechanism for eliciting responsive listening behaviors. Lechner (1991) used a paradigm originally created by Miller et al. (1985). These studies used a simulated conversation as a mechanism for eliciting responsive listening behaviors. As previously noted, an instructional situation is very different in important ways from a simulated conversation.

In an instructional situation, where there is a performance requirement, subjects may feel a greater need to indicate understanding to the speaker. A common way of conveying understanding to the speaker is to nod and to say, "okay." In the present study head nods and "okays" were used more than any other discrete behavior.

However, in a simulated conversation, where the message may not be clear, goals may not have been understood and ambiguity may be present, it may be more appropriate to respond with "yeses" and "gazing." Because of these considerations, for future research, it may be beneficial only to look at the Total number of discrete responses. The age of the examiner and the nature of the interaction may affect the type of discrete responses used by the subjects. It appears that Gaze and Smile time, with a Total variable, can provide dependent measures for looking at responsive listening across age groups and types of interactions.

#### Academic Achievement

It was predicted that higher achieving students use more responsive listening behaviors than lower achieving students. There were several reasons why relationships between academic achievement and the use of responsive listening skills were explored. Research (McCoskey and Daly, 1976; Knott, 1979; Koch, 1971; Richey and Richey, 1978) has established links between listening and achievement. However, research has not explored relationships between backchannel behaviors and academic achievement. The first attempt to establish a relationship between backchannel behaviors and academic achievement was conducted by Lechner (1991).

Lechner (1991) found evidence that suggests academic achievement is related to middle school-aged children's use

of responsive listening skills. The variable Smile was found to relate to higher levels of academic achievement in students' reading and language scores. Based upon these data, the present research wondered if these relationships extended into an adolescent population.

In order to explore these relationships, four academic achievement measures were used. First, a global measure of academic achievement was used. Three more specific measures were also used (reading comprehension, language mechanics, and mathematics). Contrary to predictions, there was no evidence which would link academic achievement to adolescent subjects' use of responsive listening skills. No differences were seen for students rated higher in academic achievement compared to students rated lower in academic achievement.

The results of the present investigation are troublesome in light of Lechner's (1991) findings. However, by revisiting Lechner's (1991) findings, with regard to elementary school-aged children's use of responsive listening skills and academic achievement, we see that, of the three dependent measures, Smile was the only dependent measure of importance. Smile related only to reading and language scores. In addition, Lechner never really explained the significance of the finding. No relationships were established between reading, spelling, or language scores with either of the two remaining dependent measures.

Clearly, a strong relationship was not established between academic achievement and the use of responsive listening.

While attempting to replicate previous research findings, the present study extended Lechner's findings. This investigation added a global measure of achievement (scholastic abilities) to three specific measures (reading mathematics, and language) in the attempt to establish a link between academic achievement and the use of responsive listening skills. By adding the global measure, a thorough sample of different domains of achievement was investigated. Still, no relationships were found.

Because a clear link between achievement and listening was not established with younger children, and no links were established between adolescents, it may be that this is not an important variable. It may not be necessary for future research to continue to explore academic achievement as a variable with respect to responsive listening skills.

#### Social Attraction, Self-Esteem, and Responsive Listening

It was predicted that there are other important factors, such as social attraction and self-esteem, which have significant relationships to students' use of responsive listening skills. Research (Lechner, 1991) has documented relationships between social attractiveness and the use of responsive listening skills in children, but self-esteem is a new variable. The present study is the

first to attempt to investigate self-esteem in relationship to adolescents' use of responsive listening.

Consistent with predictions, students who were rated by the examiner as more socially attractive engaged in more of the discrete responsive listening skills which comprise the Total variable. This finding provided evidence of social attraction, previously documented as an important variable in school-aged populations, as an important variable with adolescent-aged populations.

This study was unable to establish a significant relationship between social attractiveness and the dependent measures Gaze and Smile. A significant relationship was only found for those behaviors which comprise the Total dependent variable. Clearly, the research into social attractiveness and responsive listening is only beginning. The present investigation is only the third study, to date, which has attempted to link social attractiveness to the use of responsive listening. While evidence has been provided which indicates there is a significant relationship between social attractiveness in adolescent students' use of responsive listening, more research is needed.

Future research should address additional ways of measuring social attraction. The present research used only one technique (a seven point Likert-type scale) to measure social attraction. While this technique, updated from previous research (Lechner, 1991) may have provided a

convenient and reliable measure of social attractiveness, it may not have provided the most extensive measure of social attraction. This technique obtained a measure of social attractiveness only from the examiner. Future research may find it interesting to obtain a second measure of attractiveness in the form of a peer rating.

This researcher wondered if self-esteem would have a significant relationship to subjects' use of responsive listening. Contrary to predictions, no relationships were established between self-esteem and adolescents' use of responsive listening skills. Differences were not seen between students rated higher in self-esteem than students rated lower in self-esteem.

It may be that self-esteem, as defined in this research, is not an important variable with respect to adolescent subjects' use of responsive listening skills. What has been shown is that backchannel responses are most useful for deciding how attentive, or involved, others are during an interaction. As noted in Chapter II, these behaviors indicate interest in, and attention to, what another is saying or doing. An internal state, such as self-esteem, may not relate to subjects' use of responsive listening. Since there is no evidence that self-esteem is related to responsive listening, future research should probably not continue to explore its importance.

### Chapter Summary and Future Directions

This chapter began with a discussion of the technical strengths of this research which established the methodology for investigating responsive listening skills. The methodology used in the present study has succeeded in not only replicating previous research findings, but also has provided knowledge about the use of responsive listening skills in an adolescent population, where none previously existed.

A review of key research has been provided to help with the findings of the present research into a larger developmental perspective. Because the earliest research on backchannels documented individual differences among adults, these differences were reviewed first. It was shown that adults are consciously aware of backchannel listening behaviors and use them differently to obtain desired results. Next, a review of how these skills are acquired in children, then develop and differentiate with age, was provided. Relationships between the age and gender of the subject with respect to the use of responsive listening skills were also demonstrated. Finally, links between social attractiveness and responsive listening were discussed.

The findings of the present research demonstrated age and gender differences with respect to adolescent subjects' use of responsive listening skills. With respect to gender,

the results suggest that females engaged in more smiling and gazing than their male counterparts. These results were interpreted to lend support to notions that female adolescents demonstrate responsive listening skills that more closely match research seen with adults. Female adolescents may have developed these responsive listening skills at a rate faster than males. For example, smiling is seen to increase for males during adolescence, while remaining basically constant for females.

With regard to age differences, evidence has been provided that development of responsive listening skills continue well into the high school years. Older subjects have been seen to use more responsive listening skills than younger subjects. These findings not only replicated results of previous investigations, but the present research extended findings into a previously unresearched age group.

This study did not provide evidence which would link academic achievement to adolescent subjects' use of responsive listening skills. By revisiting Lechner's (1991) findings, it was apparent that there were no strong relationships between academic achievement and use of responsive listening skills. These results suggest that academic achievement may not be an important variable. It may not be necessary for future research to continue to explore academic achievement as a variable with respect to responsive listening skills.



This research also investigated other important factors, social attraction and self-esteem, in relationship to adolescent subjects' use of responsive listening skills. Self-esteem was investigated for the first time in this research and no significant results were obtained. It was apparent that this may not be an important variable for future research.

With regard to social attractiveness, students who were rated by the examiner as more socially attractive engaged in more of the discrete responsive listening skills which comprised the Total variable. This finding provided evidence of social attractiveness, previously documented as an important variable in school-aged populations, as an important variable with adolescents-aged populations. Caution was suggested when interpreting the significance of this finding. A discussion ensued which identified only a beginning understanding of the importance of social attractiveness as research in this area is just beginning.

Finally, this chapter has provided directions for future research. Some important, yet unanswered, questions include: Do females and males continue to differ in the amount of responsive listening skills well into adulthood? Do age differences continue into adulthood? That is, do middle-aged adults use more responsive listening skills than younger-aged adults? Or is there an age at which these skills "peak?" Are other factors operating? Are socio-

economic status or level of education important variable?

Clearly, all of these questions may need to be addressed through future research.

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## **APPENDIX A**

## APPENDIX A

SCRIPT

Did you see the movie "The Addam's Family"? I don't think you will see this house in Palatine! Let's look at the game. The title is "The Addam's Family Game". It's a fun game, so let's begin (pause and look).

1.) The object of the game is to collect the four party guests on your invitation card and the food token to win (point). I hope the cafeteria food is a little better than this. You won't see this little guy in the cafeteria! (point to food token).

2.) Okay, first, let's each choose an Addam's Family member (pick up Wednesday). WoW! She looks just like my little sister! (Put on START). Now, you select one and put your mover on start (pause). Good! Okay, let's go on (pause and look).

3). Now, each player takes one invitation card and places it face up in front of them (place card on table, pause and look). The invitation card tells you which guests you need to collect for the party (pause and look). Great! Mine says that I get to invite Cousin It! Cousin It is my favorite! (pause and look).

4). Each player spins the spinner. The player who spins the lowest number goes first by spinning and moving that many spaces counterclockwise around the board (pause and look).

5). Follow the instructions on the space you land on and play continues to the left. We'll look at some of the spaces together (pause and look).

6). Players are allowed to keep only the guest card they need during the game (point to guest cards). If a player gets a guest card that he does not need or that he already has, it is always returned to the bottom of the guest card pile (point, pause and look).

7). Any time a player spins 13, he can either move 13 spaces on the board or take the food token (pause and look). The food token may be taken from Granny's space or from the player who already has it (pause and look). Uh oh, it doesn't look like she got this at Pizza Hut!

8). When a player lands on a space occupied by another player, first follow the instructions on that space (pause and look).

9). Then, if that player has a guest card that you need, you may take it from him, but only if you need it (pause and look).

10). If you land on (point) Gomez, Morticia, Uncle Fester, Pugsly or Lurch's space, take the top guest card from the pile. If you need that guest, take it and put it face up in front of you (pause and look).

11). If you don't need it, put it on the bottom of the pile (pause and look).

12). If you land on your own family member's space, i.e. the player who has the Morticia mover lands on Morticia's space, you get to look through the guest cards and take any one card that you need (pause and look).

13). If you land on a space marked "THING" (point), take the Thing card from the deck, read it aloud and follow the instructions (pause and look).

14). Let's look at the "Graveyard" space (point, pause and look). There are six spaces in the graveyard...each of them shaped like a tombstone. Follow the directions for the space you land on (pause and look).

15). Any time a player passes the "Pick up 1 Guest..." space (point), that player takes the top card from the Guest pile (point to "Guest" pile, pause and look).

16). If you need it, keep it. If not, return it to the bottom of the pile (pause and look).

17). There are special instructions for the "Flip Coin to Draw One Guest or Two" (pause). Let's look at the "HEADS" coin (pick up, rotate in hand, pause and look). (Smile, look) It has one head or two heads! (pause and look).

18). (Flip the "Heads" coin.) If you flip Head, take the top card from the Guest pile (pause and look).

19). If you flip Heads, take the top two cards (pause). Place the card(s) you need face up in front of you. Return the card(s) that you don't need to the bottom of the pile (pause and look).

20). If you land on the "Trap Door" (pause), go to any space on the board and follow the instructions for that space (pause and look).

21). If you land on the "Lose One Guest" (pause), put any one of your guests on the bottom of the Guest card pile (pause and look).

22). If you land on Granny's space, take the food token from the space or from the player who has it. If you already have the Food Token, play passes to the next player (pause and look).

23). If you land on "Bed of Nails" (pause), you lose a turn (pause and look). Stay there until your next turn, then spin the spinner (pause and look).

24). If you spin 13, move ahead. If you don't spin 13, your turn is over. On your next turn, spin again and move that number of spaces, even if you don't spin 13 (pause and look).

25). If you land on "Go Through the Cards In The Cemetery", look through all the cards in the guest pile and take any one card that you need (pause and look).

26). If you land on "Bury A Guest...Not Your Own" (point), take a Guest card from any other player and put it at the bottom of the guest card pile (pause and look).

27). Remember, the first player to have one of each of the four Guest on his Invitation card and the Food Token wins! (pause and look). Let's play!

## **APPENDIX B**

# APPENDIX B

## COOPERSMITH SELF-ESTEEM INVENTORY

Like Me	Unlike Me	
<input type="checkbox"/>	<input type="checkbox"/>	1. Things usually don't bother me.
<input type="checkbox"/>	<input type="checkbox"/>	2. I find it very hard to talk in front of the class.
<input type="checkbox"/>	<input type="checkbox"/>	3. There are lots of things about myself I'd change if I could.
<input type="checkbox"/>	<input type="checkbox"/>	4. I can make up my mind without too much trouble.
<input type="checkbox"/>	<input type="checkbox"/>	5. I'm a lot of fun to be with.
<input type="checkbox"/>	<input type="checkbox"/>	6. I get upset easily at home.
<input type="checkbox"/>	<input type="checkbox"/>	7. It takes me a long time to get used to anything new.
<input type="checkbox"/>	<input type="checkbox"/>	8. I'm popular with kids my own age.
<input type="checkbox"/>	<input type="checkbox"/>	9. My parents usually consider my feelings.
<input type="checkbox"/>	<input type="checkbox"/>	10. I give in very easily.
<input type="checkbox"/>	<input type="checkbox"/>	11. My parents expect too much of me.
<input type="checkbox"/>	<input type="checkbox"/>	12. It's pretty tough to be me.
<input type="checkbox"/>	<input type="checkbox"/>	13. Things are all mixed up in my life.
<input type="checkbox"/>	<input type="checkbox"/>	14. Kids usually follow my ideas.
<input type="checkbox"/>	<input type="checkbox"/>	15. I have a low opinion of myself.
<input type="checkbox"/>	<input type="checkbox"/>	16. There are many times when I'd like to leave home.
<input type="checkbox"/>	<input type="checkbox"/>	17. I often feel upset in school.
<input type="checkbox"/>	<input type="checkbox"/>	18. I'm not as nice looking as most people.
<input type="checkbox"/>	<input type="checkbox"/>	19. If I have something to say, I usually say it.
<input type="checkbox"/>	<input type="checkbox"/>	20. My parents understand me.
<input type="checkbox"/>	<input type="checkbox"/>	21. Most people are better liked than I am.
<input type="checkbox"/>	<input type="checkbox"/>	22. I usually feel as if my parents are pushing me.
<input type="checkbox"/>	<input type="checkbox"/>	23. I often get discouraged at school.
<input type="checkbox"/>	<input type="checkbox"/>	24. I often wish I were someone else.
<input type="checkbox"/>	<input type="checkbox"/>	25. I can't be depended on.
<input type="checkbox"/>	<input type="checkbox"/>	26. I never worry about anything.
<input type="checkbox"/>	<input type="checkbox"/>	27. I'm pretty sure of myself.
<input type="checkbox"/>	<input type="checkbox"/>	28. I'm easy to like.
<input type="checkbox"/>	<input type="checkbox"/>	29. My parents and I have a lot of fun together.

Short

☐

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Like Me	Unlike Me	
<input type="checkbox"/>	<input type="checkbox"/>	30. I spend a lot of time daydreaming.
<input type="checkbox"/>	<input type="checkbox"/>	31. I wish I were younger.
<input type="checkbox"/>	<input type="checkbox"/>	32. I always do the right thing.
<input type="checkbox"/>	<input type="checkbox"/>	33. I'm proud of my school work.
<input type="checkbox"/>	<input type="checkbox"/>	34. Someone always has to tell me what to do.
<input type="checkbox"/>	<input type="checkbox"/>	35. I'm often sorry for the things I do.
<input type="checkbox"/>	<input type="checkbox"/>	36. I'm never happy.
<input type="checkbox"/>	<input type="checkbox"/>	37. I'm doing the best work that I can.
<input type="checkbox"/>	<input type="checkbox"/>	38. I can usually take care of myself.
<input type="checkbox"/>	<input type="checkbox"/>	39. I'm pretty happy.
<input type="checkbox"/>	<input type="checkbox"/>	40. I would rather play with children younger than I am.
<input type="checkbox"/>	<input type="checkbox"/>	41. I like everyone I know.
<input type="checkbox"/>	<input type="checkbox"/>	42. I like to be called on in class.
<input type="checkbox"/>	<input type="checkbox"/>	43. I understand myself.
<input type="checkbox"/>	<input type="checkbox"/>	44. No one pays much attention to me at home.
<input type="checkbox"/>	<input type="checkbox"/>	45. I never get scolded.
<input type="checkbox"/>	<input type="checkbox"/>	46. I'm not doing as well in school as I'd like to.
<input type="checkbox"/>	<input type="checkbox"/>	47. I can make up my mind and stick to it.
<input type="checkbox"/>	<input type="checkbox"/>	48. I really don't like being a <sup>boy</sup> girl.
<input type="checkbox"/>	<input type="checkbox"/>	49. I don't like to be with other people.
<input type="checkbox"/>	<input type="checkbox"/>	50. I'm never shy.
<input type="checkbox"/>	<input type="checkbox"/>	51. I often feel ashamed of myself.
<input type="checkbox"/>	<input type="checkbox"/>	52. Kids pick on me very often.
<input type="checkbox"/>	<input type="checkbox"/>	53. I always tell the truth.
<input type="checkbox"/>	<input type="checkbox"/>	54. My teachers make me feel I'm not good enough.
<input type="checkbox"/>	<input type="checkbox"/>	55. I don't care what happens to me.
<input type="checkbox"/>	<input type="checkbox"/>	56. I'm a failure.
<input type="checkbox"/>	<input type="checkbox"/>	57. I get upset easily when I'm scolded.
<input type="checkbox"/>	<input type="checkbox"/>	58. I always know what to say to people.

Gen

Soc

H

Sch

Total

 x2 =

L

## **APPENDIX C**

## APPENDIX C

SOCIAL ATTRACTIVENESS RATING SCALE

I.D. No. \_\_\_\_\_

M F  
Circle One

Please rate each subject according to how much you enjoyed interacting with them, following the scale provided.

Remember, enjoyable students are those who you like and with whom you generally might have successful social interactions. This might be a student that you would like to sit beside at lunch time or enjoy additional time to chat.

1	2	3	4	5	6	7
Very	Moderately	About		Moderately		Very

"1" indicates very unenjoyable, not liked at all, unsuccessful social interaction;

"4" indicates average, adequate social interaction;

"7" indicates very enjoyable, generally likeable, a successful social interaction.



## **APPENDIX D**

## APPENDIX D

PARENTS' LETTER

September, 1992

Dear Parents:

The purpose of this letter is to ask your permission for your son/daughter to participate, at school, in our study of the communication skills of adolescents. Approval of this study has been received by the Superintendent of High School District 211 and from the Instructional Review Board From the Protection of Human Subjects at Loyola University of Chicago.

Our study looks at communication skills of adolescents and how these skills relate to various attitudes. This research, fourth in a series of studies, is tracking the development of communication skills, how they change in form and function over time, and whether these skills relate to students attitudes and achievement in school.

In a single five-minute session, an adult will have a brief dialogue with the students. While the student listens to the adult, his or her conversational responses will be video-recorded for later coding. Next, students will be asked 50 questions about their likes and dislikes. No

additional direct contact will be required with your son/daughter.

We hope that you will agree for your son/daughter to participate in the study. This study has been completed at three other locations in this state and is generally fun for students to participate. Our results will be reported in terms of how adolescents as a group perform. Your son/daughter's individual score will never be reported to or discussed with anyone. Of course, as parents, you have the right to withdraw your consent and discontinue your son/daughter's participation at any time. Please fill out and sign the attached form letting us know if your student may join us. Please return the form to your son or daughter's guidance/counseling office no later than September 30, 1992. We appreciate your consideration of this request. As is your right, if you have any questions, please do not hesitate to call.

Sincerely,

Joseph A. Pikor  
School Psychologist

Carol Harding, Ph.D.  
Professor, Loyola University

## **APPENDIX E**

## APPENDIX E

PARENTAL PERMISSION

Project Title: Communication Skills and Adolescents

I, \_\_\_\_\_, the  
parent or guardian of

\_\_\_\_\_, a minor of \_\_\_\_\_  
years of age, hereby consent to his/her participation in a  
research project being conducted by Joseph Pikor, at Fremd  
High School.

**Possible risks and discomforts:** Based on previous similar  
research there is no known risk to participants in this  
study.

**Potential Benefits:** Knowing the importance of good  
communication skills for adults, the benefits of this  
research in adolescents is significant. We need to  
continually develop educational programs which prepare our  
students for success beyond school. In the schools, where  
time is a premium, early and efficient intervention would be  
valued.

**Alternatives:** Participants will be told that they may  
discontinue at any time, and will be allowed to withdraw,  
without penalty or any pressure to continue, when they  
choose.

I acknowledge that Joseph Pikor has fully explained to me  
the risks involved and the need for the research; has  
informed me that I may withdraw my child from participation  
at any time without prejudice; has offered to answer any  
inquiries which I may make concerning the procedures  
followed; and has informed me that I will be given a copy of  
this consent form.

I freely and voluntarily consent to my son/daughter's  
participation in the research project.

\_\_\_\_\_  
Students Birth Date

\_\_\_\_\_  
Signature of Researcher  
Date \_\_\_\_\_

\_\_\_\_\_  
Signature of Parent  
Date \_\_\_\_\_

## **APPENDIX F**

## APPENDIX F

DATA COLLECTION SHEET

DATE \_\_\_\_\_ SUBJECT # \_\_\_\_\_ SEX \_\_\_\_\_

BIRTHDATE \_\_\_\_\_ AGE \_\_\_\_\_

ACADEMIC:

SCHOLASTIC ABILITY TEST \_\_\_\_\_ RATING SCORE \_\_\_\_\_

MATH \_\_\_\_\_ SELF ESTEEM INDEX \_\_\_\_\_

LANGUAGE MECHANICS \_\_\_\_\_

READING \_\_\_\_\_

RESPONSIVE BEHAVIORS:

	<u>SUM</u>	<u># PER MINUTE</u>
Yeses	_____	_____
Okays	_____	_____
Uh Huhs	_____	_____
Oh's	_____	_____
Nods	_____	_____
Other	_____	_____

TOTAL \_\_\_\_\_ TOTAL/MIN \_\_\_\_\_

TOTAL TIME (mins/secs) \_\_\_\_\_

SMILE TIME (mins/secs) \_\_\_\_\_

% TIME \_\_\_\_\_

GAZE TIME (mins/secs) \_\_\_\_\_

% TIME \_\_\_\_\_

## **APPENDIX G**



## APPENDIX G

Listening by Scholastic Achievement, Analysis of Variance

---

Gaze by Achievement

Source of Variation	Sum of Squares	<u>DF</u>	Mean Square	<u>F</u>	Sig of <u>F</u>
Between Groups	.13	1	.13	.41	.524
Within Groups	31.83	103	.31		
Total	31.96	104			

---

## Smile by Achievement

Source of Variation	Sum of Squares	<u>DF</u>	Mean Square	<u>F</u>	Sig of <u>F</u>
Between Groups	.38	1	.38	2.60	.110
Within Groups	15.15	103	.15		
Total	15.53	104			

---

## Total by Achievement

Source of Variation	Sum of Squares	<u>DF</u>	Mean Square	<u>F</u>	Sig of <u>F</u>
Between Groups	8.13	1	8.13	.83	.365
Within Groups	1010.29	103	9.81		
Total	1018.42	104			

---

## **APPENDIX H**

## APPENDIX H

Listening by Reading, Analysis of Variance

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Gaze by Reading Score

Source of Variation	Sum of Squares	<u>DF</u>	Mean Square	<u>F</u>	Sig of <u>F</u>
Between Groups	.22	1	.22	.70	.405
Within Groups	31.74	103	.31		
Total	31.96	104			

---

## Smile by Reading Score

Source of Variation	Sum of Squares	<u>DF</u>	Mean Square	<u>f</u>	Sig of <u>f</u>
Between Groups	.11	1	.11	.72	.398
Within Groups	15.42	103	.15		
Total	15.53	104			

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## Total by Reading Score

Source of Variation	Sum of Squares	<u>DF</u>	Mean Square	<u>f</u>	Sig of <u>f</u>
Between Groups	12.25	1	12.25	1.25	.265
Within Groups	1006.16	103	9.77		
Total	1018.41	104			

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## **APPENDIX I**

## APPENDIX I

Listening by Math, Analysis of Variance

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Math by Gaze

Source of Variation	Sum of Squares	<u>DF</u>	Mean Square	<u>F</u>	Sig of <u>F</u>
Between Groups	.00	1	.00	.01	.910
Within Groups	31.95	103	.31		
Total	31.96	104			

---

## Math by Smile

Source of Variation	Sum of Squares	<u>DF</u>	Mean Square	<u>F</u>	Sig of <u>F</u>
Between Groups	.20	1	.20	1.32	.254
Within Groups	15.34	103	.15		
Total	15.54	104			

---

## Math by Total

Source of Variation	Sum of Squares	<u>DF</u>	Mean Square	<u>f</u>	Sig of <u>F</u>
Between Groups	17.43	1	17.43	1.79	.183
Within Groups	1000.98	103	9.72		
Total	1018.41	104			

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## **APPENDIX J**

## APPENDIX J

Listening by Language, Analysis of Variance

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**Language by Gaze**

Source of Variation	Sum of Squares	<u>DF</u>	Mean Square	<u>f</u>	Sig of <u>f</u>
Between Groups	.02	1	.02	.05	.824
Within Groups	31.94	103	.31		
Total	31.96	104			

---

**Language by Smile**

Source of Variation	Sum of Squares	<u>DF</u>	Mean Square	<u>F</u>	Sig of <u>F</u>
Between Groups	.03	1	.03	.17	.677
Within Groups	15.51	103	.15		
Total	15.54	104			

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**Language by Total**

Source of Variation	Sum of Squares	<u>DF</u>	Mean Square	<u>F</u>	Sig of <u>F</u>
Between Groups	.42	1	.42	.04	.837
Within Groups	1017.99	103	9.88		
Total	1018.41	104			

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## **APPENDIX K**



## APPENDIX K

Listening by Self-Esteem, Analysis of Variance

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Gaze by Self-Esteem

Source of Variation	Sum of Squares	<u>DF</u>	Mean Square	<u>F</u>	Sig of <u>F</u>
Between Groups	.48	1	.48	1.58	.211
Within Groups	31.48	103	.31		
Total	31.96	104			

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## Smile by Self-Esteem

Source of Variation	Sum of Squares	<u>DF</u>	Mean Square	<u>F</u>	Sig of <u>F</u>
Between Groups	.15	1	.15	1.04	.311
Within Groups	15.38	103	.15		
Total	15.53	104			

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## Total by Self-Esteem

Source of Variation	Sum of Squares	<u>DF</u>	Mean Square	<u>F</u>	Sig of <u>F</u>
Between Groups	.07	1	.07	.01	.311
Within Groups	1018.34	103	9.89		
Total	1018.41	104			

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## **APPENDIX L**

APPENDIX L  
TABLE OF MEANS

	Gaze			Smile			Total		
	$\bar{x}$	SD	n	$\bar{x}$	SD	n	$\bar{x}$	SD	n
<hr/>									
Gender									
Male	.7464	.4073	37	.2982	.2649	37	6.8137	2.7500	37
Female	1.0770	.5906	68	.2982	.4263	68	7.8857	3.2750	68
Age Group									
Male	.8650	.5918	59	.3884	.3910	59	6.2206	2.5416	59
Female	1.0830	.4812	46	.4580	.3812	46	9.1591	3.0571	46
Social Attractiveness									
Low	.9083	.5314	26	.3378	.4623	26	5.1414	2.0645	26
Mod.	.7750	.4401	40	.3846	.3556	40	7.6733	3.1361	40
High	1.1855	.6053	39	.5081	.3528	39	8.9161	2.8295	39
Scholastic Abilities									
Low	.9261	.6001	53	.3591	.3545	53	7.2324	3.1672	53
High	.9955	.5069	52	.4798	.4110	52	7.7888	3.0954	52
Self-Esteem									
Low	.8851	.3965	47	.3762	.3110	47	7.4788	2.9582	47
High	1.0216	.6522	58	.4534	.4379	48	7.5316	3.2868	48

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APPROVAL SHEET

The dissertation submitted by Joseph A. Pikor has been read and approved by the following committee:

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Associate Professor, Counseling and Educational  
Psychology, Loyola University of Chicago

Dr. Jack Kavanaugh  
Chairperson, Counseling and Educational Psychology,  
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The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

April 12, 1993  
Date

Carol Harding  
Director's Signature